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FROM THE EDITOR

The image of a wild ecosystem has become a popular metaphor for an Internet economy that in many ways resembles a rainforest or coral reef. In a rich and interdependent world where many forms of life coexist, complex relationships arise, and changing circumstances may upset the balance. Like environmentalists and gamekeepers, telecommunications regulators face the challenge of preserving conditions where life can thrive without defying natural selection through excessive meddling. But is today's commercial Internet a pristine wilderness that functions best when left alone, or is it more like a threatened habitat requiring protection from imminent harm? Should regulators think of themselves as kings of the jungle actively maintaining order in the Internet ecosystem, or as detached observers whose job is to step back and let nature run its course?

These questions sparked a lively debate at the Silicon Flatirons Center's 10th annual Digital Broadband Migration conference January 31-February 1, 2010, at the University of Colorado at Boulder. Titled *Examining the Internet's Ecosystem*, the conference allowed academics, government officials, business executives, and other thought leaders to compare perspectives on the nature of the Internet and the best way to ensure that it remains a dynamic environment for communication, innovation, and creative expression for years to come. The *Journal on Telecommunications and High Technology Law* is pleased to include in this issue eight pieces from conference participants, as well as three notes from student editors.

Professor Phil Weiser, the founding advisor of the *Journal* and a trusted mentor even while on leave to serve in the federal government, opens the discussion with a piece on entrepreneurship and antitrust policy. Silicon Flatirons Fellow Mark Cooper follows with an analysis of structured viral communications in politics and the recording industry. Professor Ellen Goodman and Anne Chen call for a revitalization of public media in the digital age, while Professor Mark Lemley provides a humorous critique of the content industries' history of opposing new technologies. Silicon Flatirons Fellow Pierre de Vries then shifts the discussion to Internet governance with a piece on principles of effective regulation. Professor A. Michael Froomkin continues with an analysis of the 2009 Affirmation of Commitments between ICANN and the U.S. government, and Professor Frank Pasquale argues for increased transparency among proprietary algorithms compiling personal data. Lawrence E. Strickling, Assistant Secretary for Communications and Information at the U.S. Department of Commerce, provides a final counterpoint to the idea of the Internet as a self-sustaining ecosystem, arguing that government plays an essential role in maintaining public

trust in the system.

Fellow *Journal* editor Jake Adkins offers a student note arguing against blanket denial of Internet access as a condition of criminal sentencing, and Shirin Chahal discusses the imbalance of access to social networks by defense attorneys during criminal discovery. Finally, my own student note explores the application of the hot news misappropriation doctrine to news content on the Internet.

I am grateful to the *Journal's* editorial board and staff for their enthusiasm for this material and hard work producing this issue. In particular, I thank Articles Editors Jennifer McDonald, Shirin Chahal, Angela Morrison, and Meredith Simmons for their thoughtful revisions, as well as Production Editors Therese Kerfoot and Jake Adkins for their sharp eyes and technical expertise. Managing Editor Alison Jensen capably oversaw the *Journal's* financial operations, Executive Editor Catherine Holtgrewe built positive relationships among the staff, and Resource Editor Christian Alexander diligently located obscure source materials. Student Note Editors Kimberly West, Desta Asfaw, Kazuyo Morita, Rebecca Siska-Salkin, and Angela Wade served as mentors helping staff members write quality papers for the next volume of the *Journal*. Associate Editors Vlad Etinger, Tawnya Ferbiak, Christine Rinke, and Todd Spivak also proved invaluable in helping keep the production process on track. I appreciate the efforts of the entire staff to bring this issue to press, but Symposium Editor Madelaine Maior and Associate Symposium Editor Janna Fischer deserve special commendation for their hard work organizing conferences that will produce papers for future issues of the *Journal*.

Between the Colorado Law faculty and the staff and fellows of the Silicon Flatirons Center, the *Journal* is fortunate to draw upon a wealth of experience in the technology and telecommunications fields. I am indebted to Professors Paul Ohm and Harry Surden for their assistance as our advisors, and to Professors Brad Bernthal, Preston Padden, Andy Hartman, and Phil Weiser for their input and guidance throughout the year. The *Journal's* relationship with Silicon Flatirons is among its greatest assets, and it has been a pleasure to work with Anna Noschese, Jamie Stewart, and the rest of the Center's distinguished contributors. I also am grateful to office manager Martha Utchenik for her institutional knowledge and dedication to the *Journal*, as well as to the members and editors of the *University of Colorado Law Review* and *Colorado Journal of International Environmental Law and Policy* for their cooperation and collegiality.

Finally, I dedicate this issue to Professor Dale Hatfield, whose leadership as Executive Director of the Silicon Flatirons Center and well-deserved reputation as a legend in the field make the University of Colorado a truly special place to study telecommunications law. At a

dinner following the 2010 Digital Broadband Migration conference, speakers ranging from former students to current members of the Federal Communications Commission shared story after story about Dale's intellectual curiosity, unpretentious humility, and genuine concern for the public interest. In the relatively short time I have known Dale, I also have appreciated his selfless commitment to students and encouragement to carry on the work he started. I hope this issue of the *Journal* makes a small but worthy contribution to that legacy.

Eric P. Schmidt
Editor-in-Chief

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INNOVATION, ENTREPRENEURSHIP, AND THE INFORMATION AGE

PHILIP J. WEISER*

INTRODUCTION

It is a somewhat surreal experience to come back to Boulder as a government official. But in many important respects, I never really left. My perspectives on innovation, entrepreneurship, and the role of competition policy were shaped by my experiences and my work here. And they are among the important topics I am now focused on at the Department of Justice. So to bring my work in this area full circle, I will be talking about these topics today, discussing the role of entrepreneurship in our information age, how competition catalyzes entrepreneurship and innovation, and how antitrust law provides the foundation for competitive markets. Finally, I will touch on the institutional challenges that antitrust enforcers must confront in order to act effectively in dynamic markets.

I. ENTREPRENEURSHIP AND THE DYNAMICS OF THE INFORMATION AGE

For most of the 20th century, AT&T represented the telecommunications industry and the effort to regulate it was

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telecommunications policy. To that end, the company that Theodore Vail once championed as providing "one system, one policy, universal service" was indeed responsible for an explosion of telephone penetration, the employment of over a million Americans, and highly valuable basic research in its vaunted Bell Labs.[1] But that same company also suppressed innovation in the marketplace—thwarting the introduction of products that connected to its phone system, thumbing its nose at the development of the Internet, and taking its time in pursuing the development of mobile telephony.[2] It also operated as only a monopolist could, declining, for example, to purchase fiber optic technology from its inventor, Dow Corning, only doing so once competition (from upstarts MCI and Sprint) forced its hand.[3]

Promoting competition and entrepreneurship, as was eventually done in the telecommunications industry, is an essential component of innovation policy. In this respect, the United States enjoys an important advantage over other countries because, as *The Economist* put it, "entrepreneurialism is so deeply rooted in [our] history."[4] And indeed, the U.S. strength in entrepreneurship undoubtedly benefits from a willingness of entrepreneurs and businesses to take risks. This is part of what enables entrepreneurs to *try*, and then ultimately, to succeed.[5] In other countries, by contrast, the view of failure as a badge of infamy can undermine risk-taking behavior, discourage entrepreneurship, and eliminate a major source of innovation.

There are a number of critical factors, in addition to our entrepreneurial DNA, that explain and continue to fuel the U.S. entrepreneurial engine.[6] First, a strong domestic venture capital system provides the essential fuel for entrepreneurial startup activity, dramatically shaping our ability to drive innovation and economic growth. Second, the U.S. system of higher education is a crown jewel of our entrepreneurial engine; consider, for example, that half of the start-up firms in Silicon Valley reportedly are rooted in some fashion to Stanford University.[7] Third, the model of working for a single company

1. STEVE COLL, THE DEAL OF THE CENTURY: THE BREAKUP OF AT&T 8 (1986).

2. *Id.*

3. *See infra* note 42 and accompanying text.

4. Adrian Wooldridge, *Global Heroes: A Special Report on Entrepreneurship*, ECONOMIST, Mar. 14, 2009, at 6.

5. As Michael Porter put it: "Only in America can young people raise millions, lose it all, and return to start another company. . . . Our willingness to restructure, take our losses, and move on will allow the U.S. to weather the current crisis better than most countries." Michael E. Porter, *Why America Needs an Economic Strategy*, BUS. WK., Nov. 10, 2008, at 40.

6. For an extensive discussion of these factors, *see* EXECUTIVE OFFICE OF THE PRESIDENT, A STRATEGY FOR AMERICAN INNOVATION: DRIVING TOWARDS SUSTAINABLE GROWTH AND QUALITY JOBS (2009) [hereinafter Strategy for Innovation].

7. Wooldridge, *supra* note 4, at 7.

over the course of one's career—being an "IBM man," to take a 1960s example—is largely a relic of history. As *The Economist* recently put it, "[i]n the 1960s workers had had an average of four different employers by the time they reached 65. Today they have had eight by the time they are 30."[8] With that change, people are forced to take a more entrepreneurial attitude toward their own careers.

A final driver of entrepreneurship is our strength in three industries that are facilitating innovation at a greater pace than ever before: the computer, the mobile phone, and the Internet. Taken together, these technologies are—as Eric von Hippel put it—democratizing innovation.[9] After all, in today's world, a startup can easily gain computing power by contracting with Amazon (for access to its cloud computing capacity on a pay-as-you-go basis), develop an application that can immediately become a hit for the iPhone, or reach large audiences by establishing a respected blog (as Nate Silver has done at fivethirtyeight.com, using his statistics expertise to reimagine political polling).

The impact of entrepreneurship in the information age is being felt across the globe. Increasingly, entrepreneurs are finding business models that can deliver the information age to populations around the world. Consider, for example, how Iqbal Quadir, a Bangladeshi who emigrated to the U.S., developed a plan for using microfinance to enable women in villages to buy mobile phones and charge for access to them. Based on that plan, Bangladesh now has over 270,000 "phone ladies," who, using a specially designed mobile phone with long-lasting batteries, are selling minutes to local villagers. The venture now enjoys annual revenues in the neighborhood of $1 billion—all by tapping an entrepreneurial spirit and hunger for access to the information age.[10]

The dynamics of today's information age have pushed economists further away from the classic, static focus on prices—which remains an important part of economics, to be sure—to a greater appreciation for the impact of innovation. The godfather of this perspective, of course, is Joseph Schumpeter, who emphasized the opportunity for "gale[s] of creative destruction" to transform markets.[11] Stanford's Paul Romer offers a different metaphor to make the same point—"[e]conomic growth occurs whenever people take resources and rearrange them in ways that make them more valuable. . . . [It] springs from better recipes, not just more cooking."[12]

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8. *Id.* at 5.

9. ERIC VON HIPPEL, DEMOCRATIZING INNOVATION (2005).

10. Wooldridge, *supra* note 4, at 4.

11. JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY, 82 (1942).

12. Paul Romer, *Economic Growth*, *in* THE CONCISE ENCYCLOPEDIA OF ECONOMICS (David R. Henderson, ed. Liberty Fund 2008) (1993).

The international dynamics of entrepreneurship are spurring competition between countries—and cities—to welcome start-up businesses. In this respect, the Thomas Friedman suggestion of a "flat world" captures an important insight that was well qualified by Richard Florida, who remarked that "the world is spiky."[13] By that, Florida explained that "the tallest peaks [where innovation takes place]—the cities and regions that drive the world economy—are growing ever higher, while the valleys [which can be in the same countries as some of those peaks] mostly languish."[14] The World Bank, in an effort to spur (and judge) the effectiveness of countries' efforts to welcome entrepreneurial activity, began in 2003 to publish an annual report entitled *Doing Business*.[15] In that report, it measured how different countries handled business regulations, enforced property rights, and enjoyed access to credit. Moreover, it underscored the connection between economic prosperity and a welcoming attitude toward business. Consider, for example, the impact on entrepreneurship where governments can engage in hold-up—in effect, asking for a piece of a successful business without having to share in the risk on the front end. Such a practice, which takes place when there is a culture of corruption (as opposed to a commitment to the rule of law), is toxic to the entrepreneurial spirit. A milder, but still toxic pollutant, is the tendency of many countries' regulations to delay for months or years the ability of entrepreneurs to start new businesses.

As *The Economist* reported, this project of "naming and shaming" countries to improve their business climate has spurred more than 1,000 reforms and enabled countries to learn from and be inspired by the steps that others take.[16] And such reforms need not be limited to developing nations. On account of its commitment to entrepreneurship, Canada now enables individuals to start a business with just one procedure. Underscoring the importance of the dynamics spurred by the *Doing Business* report, Robert Litan, of the Kauffman Foundation, suggests that the World Bank "may have done more good by compiling *Doing Business* than by lending much of the money that it has."[17]

One fascinating dynamic in today's entrepreneurial economy is that the world is simultaneously more locally driven and more interlinked. It is more local because clusters of business start-up and expansion activity can create local symbiotic relationships that fuel further growth and

13. Richard Florida, *The World is Spiky*, ATLANTIC MONTHLY, Oct. 2005, at 48.

14. *Id.*

15. THE WORLD BANK GROUP, THE WORLD BANK, DOING BUSINESS (2010), http://www.doingbusiness.org (interactive online format).

16. Wooldridge, *supra* note 4, at 9.

17. *Id.*

innovation; it is more interlinked because ongoing technological development and races to innovate have created internationally interconnected networks for product development, production, and distribution. A key challenge, recognized and engaged by the Obama Administration's *Strategy for American Innovation*, is understanding how best to balance these local and global forces.[18] For countries, it creates an awkward dynamic insofar as modern economic forces are making both local geography and global connections more important. Thus, to be economically successful, countries must both support local economic clusters to spur entrepreneurship and innovation as well as participate and compete in global markets.[19] In short, any successful innovation policy in today's information age depends on clear and effective competition policy.

II. ANTITRUST LAW AND THE COMPETITIVE MODEL

Antitrust law, unlike classic command-and-control regulation, is the friend of entrepreneurs because it works in service of the free market (and not as a substitute for it).[20] Along these very lines, Justice Breyer once explained that:

> [A]ntitrust is not another form of regulation. Antitrust is an alternative to regulation and, where feasible, a better alternative. To be more specific, the classicist first looks to the marketplace to protect the consumer; he relies upon the antitrust laws to sustain market competition. He turns to regulation only where free markets policed by antitrust laws will not work—where he finds significant

18. Strategy for Innovation, s*upra* note 6, at 9 ("It is imperative to create a national environment ripe for entrepreneurship and risk taking that allows U.S. companies to be internationally competitive in a global exchange of ideas and innovation. Through competitive markets, innovations diffuse and scale appropriately across industries and globally."); *id.* at 17 (noting value of regional innovation clusters); *see also* ORG. FOR ECON. CO-OPERATION AND DEV., OECD INNOVATION STRATEGY (2010), http://www.oecd.org/innovation/strategy.

19. On the economic clusters point, Michael Porter reported that:

> [T]he task of forming economic policy and putting it into practice is highly decentralized across states and regions. There really is not a single U.S. economy, but a collection of specialized regional economies—think of the entertainment complex in Hollywood or life sciences in Boston. Each region has its own industry clusters, with specialized skills and assets. Each state and region takes responsibility for competitiveness and addresses its own problems rather than waiting for the central government. This decentralization is arguably America's greatest hidden competitive strength.

Porter, *supra* note 5.

20. *See* Town of Concord v. Boston Edison Co., 915 F.2d 17, 22 (1st Cir. 1990) ("Economic regulators seek to achieve [consumer welfare] directly by controlling prices through rules and regulations; antitrust seeks to achieve [this goal] indirectly by promoting and preserving a [competitive] process . . . ." (emphases omitted)).

> market 'defects' that antitrust laws cannot cure. Only then is it worth gearing up the cumbersome, highly imperfect bureaucratic apparatus of classical regulation. Regulation is viewed as a substitute for competition, to be used only as a weapon of last resort—as a heroic cure reserved for a serious disease.[21]

The impact of regulation can be more problematic than its "imperfect bureaucratic apparatus." In particular, regulated firms frequently develop a comfort level with their regulator, use government to raise barriers to entry, and, in some cases, remain protected from competition. Consider, for example, the old model of regulation for the airline industry. Under that model, Southwest Airlines was relegated to competing only in Texas, as the State of Texas authorized competition in the intrastate market while the Civil Aeronautics Board ("CAB") refused to allow Southwest to enter the interstate air transport market.[22] Similarly, AT&T took advantage of the FCC's willingness to bar entry, in one case famously restricting the use of a plastic, cup-like device that was used to provide greater levels of privacy protection when using a telephone. The D.C. Circuit's reversal of the FCC decision in that case—known as the "Hush-A-Phone" decision[23]—effectively set off the deregulatory process that culminated, through an antitrust consent decree, in the break-up of AT&T.

The flip side of the antitrust-regulation dynamic is that, for markets that are not natural monopolies, sound antitrust policy can guard against undue concentration, ensure the possibility of entry, and prevent incumbent firms from protecting their position through abusive practices. It is this dynamic, and the role of antitrust law in protecting entrepreneurship and disruptive entry, that I want to focus on today.[24] Before doing so, however, I must acknowledge a couple of intellectual debts.

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21. Stephen G. Breyer, *Antitrust, Deregulation, and the Newly Liberated Marketplace*, 75 CAL. L. REV. 1005, 1007 (1987) (emphasis omitted).

22. At least until Fred Kahn and others spearheaded a regulatory reform effort that deregulated the industry. *See* Philip J. Weiser, *Alfred Kahn as a Case Study of a Political Entrepreneur: An Essay in Honour of his 90th Birthday*, 7 REV. NETWORK ECON. 603, 605-09 (2008) (describing Kahn's spearheading of regulatory reform).

23. Hush-A-Phone Corp. v. United States, 238 F.2d 266 (D.C. Cir. 1956).

24. A STRATEGY FOR AMERICAN INNOVATION also makes this point:

> In many industries, small companies are critical innovators, bringing enormous benefits to consumers while putting competitive pressure on incumbent firms. The Obama Administration is committed to enforcing the antitrust laws to insure that innovative entrepreneurs are not excluded from the market by anti-competitive conduct. The Department of Justice actively investigates allegations of exclusionary conduct as part of its law enforcement mission to keep markets open and competitive.

Strategy for Innovation, *supra* note 6, at 17.

First, for all of us in the antitrust world, Michael Porter's work provides important inspiration and guidance. In particular, Porter's work underscores that nations with vibrant traditions of competition policy develop stronger companies prepared to compete in the world economy.[25] By contrast, Porter explains, protectionist policies—through regulation or otherwise—undermine the pressures for innovation that come from competition.[26] To that end, Porter explains in considerable part that America's economic engine rests on the fact that it has a steadfast "commitment to competition and free markets," driving a "remarkable level of restructuring, renewal, and productivity growth in the U.S."[27] Moreover, Porter explains, that strength requires active antitrust enforcement, including guarding against undue concentration that can allow single firms to dominate markets, thereby undermining competition and innovation.[28]

Second, on the point of connecting the importance of competition and innovation, my teacher, F.M. Scherer, both appreciated Schumpeter's focus on innovation and highlighted how he erred in evaluating what spurs innovation. In particular, Scherer's research led him to the conclusion that Schumpeter's suggestion that monopolies would innovate better than competitive markets was "more wrong than right," concluding that "giant monopolistic corporations were not uniquely efficacious engines of technological advance."[29] Indeed, as empirical analyses by Scherer and others have found, smaller firms tend to be more aggressive innovators,[30] even in cases where the large firms are the ones who sponsor the relevant basic research.[31] In short, as Scherer

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25. MICHAEL E. PORTER, COMPETITIVE ADVANTAGE: CREATING AND SUSTAINING SUPERIOR PERFORMANCE (1998).

26. MICHAEL E. PORTER, COMPETITIVE STRATEGY 29 (1980).

27. Porter, *supra* note 5.

28. Porter, *supra* note 25, at 206.

29. F.M. Scherer, *An Accidental Schumpeterian*, 40 AM. ECONOMIST 5, 13 (1996).

30. *See* Richard J. Gilbert, *Looking for Mr. Schumpeter: Where Are We in the Competition-Innovation Debate? in* INNOVATION POLICY AND THE ECONOMY 159-215 (Adam B. Jaffe et al. eds., 2006) (highlighting the spur to innovation from competitive market structures); F.M. SCHERER, INNOVATION AND GROWTH: SCHUMPETERIAN PERSPECTIVES 246–47 (1984) (concluding from empirical studies that entrenched monopolists tend to be averse to innovation for fear that new products will cannibalize revenues from their existing products); Wesley M. Cohen & Steven Klepper, *A Reprise of Size and R & D*, 106 ECON. J. 925, 925 (1996) (concluding that, in academic circles, an "enduring consensus emerged long ago that large firms have no advantages in R & D competition and may even suffer disadvantages"); *id.* at 929 ("[S]maller firms accounted for a disproportionately large number of patents and innovations relative to their size."); Douglas H. Ginsburg, *Antitrust, Uncertainty, and Technological Innovation*, 24 ANTITRUST BULL. 635, 649 (1979) ("Studies have indicated . . . that small firms are more efficient than larger ones in conducting research.").

31. Consider, for example, the case of Xerox, whose research laboratory—the Xerox Palo Alto Research Center (PARC)—developed numerous innovations, such as the graphical user interface and the mouse. Despite the excitement of the engineers who developed these

and Ross put it, "[t]echnological progress thrives best in an environment that nurtures a diversity of sizes and, perhaps, especially, that keeps barriers to entry by technologically innovative newcomers low."[32] This is, admittedly, a broad generalization and results vary from industry to industry, with some industries—like pharmaceuticals—plainly reliant on economies of scale to invest heavily in research and development efforts to produce new innovations.

With Porter and Scherer in mind, we can turn to the concept of "disruptive entry," which invokes Clayton Christensen's concept of disruptive technologies.[33] Such technologies, Christensen explains, rarely threaten legacy business models initially because they start out providing a lower quality version of an established product and serve a small, underserved segment.[34] Over time, however, the quality improvements in the product or service enable the firm deploying the disruptive technology to challenge the incumbent's product or service. That challenge is particularly difficult for the incumbent firm to weather because its willingness to adopt the technology and business model of the upstart would involve cannibalizing itself—that is, undercutting its own legacy model and eroding already profitable lines of business. Few firms are willing to take that step.

As one example of disruptive technology, consider some of the changes that the Internet has wrought. For years, established brokers charged relatively large amounts of money (say, $80-$100) for trades to buy or sell stocks. Today, the Internet provides a number of choices for low-cost brokerage services at about $10 per trade. To be sure, those trades do not come with the hand-holding that the brick-and-mortar firms offer, but most consumers elect the lower cost offering. For the classic, established brokers, the advent of Internet-backed brokerage firms, like Ameritrade and E-Trade, constituted a disruptive technology that left them with a terrible choice—meet the competition and cannibalize themselves by offering low-price trades online, or maintain their old business models and watch their market share erode.[35]

When confronted with disruptive entry, one tempting response for incumbents is to ask the regulator for protection. In the case of the

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inventions, Xerox failed to recognize their value, declined to commercialize them, and ultimately enabled the more entrepreneurial upstart, Apple Computer, to be the one to bring them to market. *See* MICHAEL A. HILTZIK, DEALERS OF LIGHTNING: XEROX PARC AND THE DAWN OF THE COMPUTER AGE (1999).

32. FREDERIC M. SCHERER & DAVID ROSS, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 660 (Houghton Mifflin Company 3d ed. 1990).

33. *See* CLAYTON M. CHRISTENSEN, THE INNOVATOR'S DILEMMA: WHEN NEW TECHNOLOGIES CAUSE GREAT FIRMS TO FAIL (1997).

34. *See id.* at 129.

35. Jerry Useem, *Internet Defense Strategy: Cannibalize Yourself*, Fortune, Sept. 6, 1999, at 121.

Internet-based trading, the established firms were indeed interested in convincing the SEC to block entry by Internet upstarts.[36] This dynamic makes it enormously important for regulators to adhere to competition policy principles and to resist the claims of incumbent industry players that they should be protected against entry.

To provide policymakers with the intellectual fortitude to resist such pressures, the Antitrust Division engages in competition policy advocacy that calls out protectionist efforts for what they are. Consider, for example, comments filed by the Division related to state certificate of need ("CON") programs in the health care field, which are often a precondition to opening a new facility. Because CON programs can restrict entry, they have the ability to impose costs through diminished competition that can outweigh any purported advantages. In Michigan, the Division filed comments with the State Senate on the proposed Certificate of Need standard for Proton Beam Therapy Services. As the Division letter stated:

> The standards [in the proposed legislation] have the potential to delay or exclude a competing and perhaps superior technology from entering the marketplace, and therefore may have substantial negative health consequences for cancer patients in Michigan. By requiring a majority of the nine largest radiation oncology providers to agree to collaborate before a certificate of need for a PBT unit will be issued, the proposed standards create a significant economic incentive for the current providers of radiation oncology services to protect their revenues by delaying or defeating entry of a competing product.[37]

Invoking this very analysis, Michigan Governor Granholm vetoed the legislation and made clear that a policy of open competition would best serve Michigan consumers.

Another set of responses by incumbent firms to the threat of disruptive entry is "self-help"—either individual or collective. By self-help, I mean any market practices designed to thwart the success of the entrant other than competing on the merits. To provide a few tastes of this dynamic, let me discuss a few notable examples of such conduct, and discuss the role for antitrust policy in this area.

In the Michigan CON case noted above, it was a set of incumbent providers who decided to cooperate in supporting a regulatory regime that would protect their market position and prevent a rival technology

36. *See, e.g.*, Diana B. Henriques, *Testing an Emerging Market; Can Wall St.'s Old Guards Cope With the New Trading?*, N.Y. TIMES, May 12, 1999, at C1.

37. Letter from Joseph Miller, Assistant Chief, Litigation I Section, Antitrust Division, United States Department of Justice, to Senator Michael D. Bishop, Michigan State Senate (Jun. 6, 2008), *available at* http://www.justice.gov/atr/public/comments/234407.pdf.

platform from entering the market. Incumbent firms need not seek legislation to accomplish this result, however. In the famous *Allied Tube* case, for example, a group of producers of metal conduit manipulated the vote of a standards body to ensure that a rival technology, i.e., one using plastic conduit, would be far less likely to be certified as safe and, more broadly, would be viewed as suspect.[38] Given that the judgments of the standards body were often incorporated into local construction codes, the vote of the body excluded the rival technology from the market. After it evaluated this course of conduct and the result, the Supreme Court recognized the competitive harm and consequences entailed by allowing a group of competitors to cooperate in spurring the standards body to act in the manner described above.[39]

In the area of single-firm conduct, the two leading cases in the last quarter of the 20th century—*U.S. v. AT&T*[40] and *U.S. v. Microsoft*[41]—both involved the efforts of an incumbent monopolist to thwart disruptive entry. In *U.S. v. AT&T*, the Justice Department's case focused on the efforts of AT&T to protect its legacy monopoly from would-be rivals in the equipment manufacturing and long distance markets. In the equipment market, AT&T used both its control over the interface to the telephone network and its monopsony power to forestall competition and the emergence of new technologies. Addressing AT&T's abuse of its monopoly power in both respects facilitated one of the century's most impressive innovations: the rise of the Internet. Notably, access to the telephone network through open interfaces was necessary for the development and deployment of modems, and the break-up of AT&T led to the upgrade in long-haul connections, principally through the deployment of fiber optic technology.

The impact of the AT&T case on the development of the disruptive entrant who developed fiber optic technology bears particular notice. Before the AT&T case was settled, AT&T took the position that it did not want to purchase the technology and, when it did, it would not do so from a disruptive entrant. As one account related:

> AT&T, which owned most of the telephone lines in America at the time [of the invention of fiber optic technology], said it would be 30 years before its telephone system would be ready for optical fiber. And when it was, AT&T planned to make its own fiber. . . . [After AT&T entered into a consent decree [with the federal government allowing competition in long distance], MCI took the risk [of

38. Allied Tube & Conduit Corp. v. Indian Head, Inc., 486 U.S. 492, 496-97 (1988).

39. *Id.* at 504.

40. 552 F. Supp. 131, 224 (D.D.C. 1982), *aff'd sub nom.*, Maryland v. United States, 460 U.S. 1001 (1983).

41. 253 F.3d 34, 55 (D.C. Cir. 2001) (en banc).

> ordering fiber optic technology] and placed a 100,000 kilometer order for a new generation of fiber.[42]

In this case, the effectiveness of the antitrust case enabled the disruptive entrant to prevail. In earlier eras, however, the incumbent firms were able to stall new entry and implement the very strategy AT&T envisioned for fiber optics: delaying the new technology and ultimately deploying it on its own, leaving the innovative entrant with nothing to show for its entry.

For an example of an entrant receiving insult on top of injury in return for its innovation, consider the case of Edwin Armstrong. Armstrong was a Columbia University Engineering Professor and the inventor of FM radio, who spent over twenty years seeking to convince the FCC to authorize the use of the technology. During that time, the established AM broadcasting incumbents (namely, NBC, CBS, and ABC) engaged in successful delaying tactics at the FCC and, conjoined with the delays caused by World War II, substantially limited the development of this technology until Armstrong's patents on the technology expired. Left broke and despondent, Armstrong committed suicide in 1954, bemoaning that "'by means of restrictive regulations and slippery measures, a superior scientific advancement could be overwhelmed by the shoddy and the expedient.'"[43]

More recently, *U.S. v. Microsoft* raised the core concern that a dominant firm used its monopoly power to squelch the threat posed by disruptive technologies. In that case, Netscape's browser product and Sun's Java technology—as the basis of a middleware platform—threatened to displace Microsoft's monopoly in the operating system market. Microsoft's response to this threat involved a series of acts designed to prevent this technology from taking off.[44] In *Microsoft*, the remedy provided access to open interfaces (in this case, application programming interfaces and communications protocols) as a means of ensuring that Microsoft could not use its control over them to prevent middleware rivals from emerging in the future.[45]

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42. Philip J. Weiser & Dale Hatfield, *Spectrum Policy Reform and the Next Frontier of Property Rights*, 15 GEO. MASON L. REV. 549, 605 n.276 (2008) (quoting *Telecommunications: The Role of the Department of Justice: Hearing Before the H. Comm. on the Judiciary*, 104th Cong. 125-26 (1995) (statement of Timothy J. Regan, Division Vice President and Director of Public Policy, Corning, Inc.)).

43. Thomas W. Hazlett, *The Wireless Craze, the Unlimited Bandwidth Myth, the Spectrum Auction Faux Pas, and the Punchline to Ronald Coase's "Big Joke": An Essay on Airwave Allocation Policy*, 14 HARV. J.L. & TECH. 335, 412-13 (2001) (quoting LAWRENCE LESSING, MAN OF HIGH FIDELITY: EDWIN HOWARD ARMSTRONG 273 (1954)).

44. United States v. Microsoft Corp., 84 F. Supp. 2d 9 (D.D.C. 1999), *aff'd*, United States v. Microsoft Corp., 165 F.3d 952 (D.C. Cir. 1999).

45. United States v. Microsoft Corp., 231 F. Supp. 2d 144 (D.D.C. 2002).

III. INSTITUTIONAL CHALLENGES AND ANTITRUST REMEDIES

In reflecting on the challenges presented to antitrust law by the emergences of the new economy, Judge Richard Posner commented that antitrust law is "supple enough" to address dynamic and high technology issues.[46] "The real problem," Posner suggested, "lies on the institutional side: the enforcement agencies and the courts do not have adequate technical resources, and do not move fast enough, to cope effectively with a very complex business sector that changes very rapidly."[47] I am very sympathetic to Posner's perspective that antitrust institutions—as opposed to antitrust doctrine—deserve closer scrutiny. As such, I will close with a few reflections on this challenge in connection with the mission of antitrust law to support entrepreneurship by keeping markets open to the deployment of disruptive technologies.

The first institutional challenge is for antitrust agencies to develop sufficient market intelligence to know what emerging dynamics pose threats to established incumbents and may generate reactions of the types discussed above. This is no small challenge insofar as venture capitalists are not apt to invest in companies that need an antitrust strategy or, in the case of already funded companies, to implement an antitrust strategy in the face of predation that threatens the existence of the start-up firm. In this sense, Netscape was fortunate that Microsoft did not recognize the disruptive opportunities of the Internet until Netscape had already emerged.

To the extent that companies self-regulate and adopt pro-competitive responses to the threats of disruptive entry, that is a victory for the antitrust laws. Indeed, this type of response—which comes from public awareness of precedents like *U.S. v. Microsoft* and the effective counseling by numerous lawyers who advise their clients on what they can and cannot do—is the heart of the antitrust regime. Notably, possessing a monopoly does not raise an antitrust concern; after all, as Judge Learned Hand put it, "[t]he successful competitor, having been urged to compete, must not be turned upon when he wins."[48] Nonetheless, antitrust enforcers cannot take that compliance for granted and must evaluate the behavior of dominant firms to ensure that they don't abuse their monopoly power by excluding rivals from the marketplace.

The second formidable challenge for antitrust enforcement is to understand the dynamics of high technology industries so that antitrust enforcers can evaluate effectively the relevant competitive concern. As

46. Richard A. Posner, *Antitrust in the New Economy*, 68 Antitrust L.J. 925, 925 (2001).
47. *Id.*
48. United States v. Aluminum Co. of Am., 148 F.2d 416, 430 (2d Cir. 1945).

Judge Posner concluded and Assistant Attorney General Christine Varney has reiterated, the antitrust laws apply to technology industries, meaning that enforcers and courts must develop the analytical tools to sort "the wheat" (the practices of real concern) "from the chaff" (either fleeting or benign practices), especially in these rapidly evolving and complicated fields.[49] That does not mean that such issues are easy to understand. In my experience, however, relying on the dedication, intelligence, and care of the antitrust authorities is our best policy for addressing competition concerns. By contrast, the culture and sometimes protectionist traditions of regulatory agencies tend to promote stasis and be more susceptible to the pressures of the established firms.

The final institutional challenge, and perhaps the most daunting, is devising appropriate remedies. In my principal stab at this issue, I have suggested that one promising approach is for antitrust enforcers and courts to leverage, at least to some extent, the work of existing institutions, such as standard setting bodies, in responding to anticompetitive practices.[50] In the *Microsoft* consent decree, the oversight regime took a different approach, establishing a new institution, a technical committee, to monitor Microsoft's compliance with the decree. In the *Otter Tail* case, by contrast, the Supreme Court relied on an existing institution, the Federal Power Commission, to oversee the terms of a mandated commitment to provide wholesale wheeling services.[51] Whether courts identify existing institutions capable of aiding a remedial strategy or seek to develop new ones, it is clear that more thought and care must be devoted to this important area.

CONCLUSION

The role of innovation is critical to our nation's economy and the antitrust laws are premised on the importance of promoting innovation through the competitive process. In the case of competition between established firms, antitrust law is able to function reasonably well insofar as the relevant issues are very likely to be raised by the parties themselves and the enforcers will be well positioned to make a decision. The harder challenges for antitrust enforcers are to address and remedy efforts to squelch the development of more nascent disruptive entrants. To address such cases, antitrust enforcers must work hard to identify the relevant areas of competitive concern, evaluate whether or not the antitrust laws

49. *See* Christine A. Varney, Assistant Att'y Gen., Vigorous Antitrust Enforcement in this Challenging Era, Remarks as Prepared Before the Center for American Progress 6-7 (May 11, 2009),.

50. *See* Philip J. Weiser, *Regulating Interoperability: Lessons from AT&T, Microsoft, and Beyond*, 76 ANTITRUST L.J. 271 (2009).

51. Otter Tail Power Co. v. United States, 410 U.S. 366, 375-77 (1973).

were violated, and devise appropriate remedies where a violation is found. This work is every bit as challenging as it is important.

STRUCTURED VIRAL COMMUNICATIONS: THE POLITICAL ECONOMY AND SOCIAL ORGANIZATION OF DIGITAL DISINTERMEDIATION

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INTRODUCTION

This paper applies a new institutional economic analysis of what I call "structured viral communications" to two of the most interesting stories of cyberspace: (1) digital disintermediation in the music business; and (2) the 2008 Obama campaign. The paper positions the analysis between two extreme views of the digital revolution's impact on traditional business models. At one extreme is the Internet fairytale of "free everything";[1] on the other end are the copyright-holder sob stories of pirates "stealing everything."[2] While there is a certain amount of truth in each view, both overstate their case and, consequently, offer a fundamentally flawed account that provides a faulty basis for policymaking.

The "Internet fairytale" dramatically overestimates the ease of cost recovery in a world of low marginal costs. Moreover, it underestimates the challenge of organizing the economic relationships needed to recover substantial average costs and achieve long-term viability. The Internet fairytale also violates the first principle of the free software movement: "'[F]ree' as in 'free speech,' not as in 'free beer.'"[3] The failure to carefully define what "free" is endangers the achievement of what it is and could be. Failing to deal with long run recovery of real costs gives excessive credence to the sob story of the copyright holders, who, of course, demand far more control over free speech than is needed to cover their costs. However, the "copyright-holder sob story" vastly overestimates the role of piracy in the decline of revenues and underestimates the benefits of economic efficiency. What could be a reasonable argument in support of incentivizing content creation quickly deteriorates into a legitimation of the abuse of market power and the defense of efforts to capture economic rents made available by technological innovation. By overreaching on the claim of piracy, proponents of this view undermine

1. *See, e.g.*, CHRIS ANDERSON, FREE: THE FUTURE OF A RADICAL PRICE 3, 13 (2009).

2. *See, e.g.*, Preston R. Padden, EVP, Worldwide Gov't Relations, Walt Disney Co., Building a Framework for Efficient Enforcement, Remarks at the Silicon Flatirons Conference: The Digital Broadband Migration: Information Policy for the Next Administration (Feb. 11, 2008).

3. GNU Operating System, http://www.gnu.org (last visited Oct. 12, 2010).

the case for copyright.

The new institutional economic framework is ideally suited to combine these two accounts and extract valid organizational insights. It integrates the economics of production costs and transaction costs by stressing the challenges of institutionalizing social and economic relations in durable, resource-generating organizations. Douglass C. North, a Nobel laureate and leading practitioner of new institutional economics, summarizes the framework as follows:

> Institutions provide the basic structure by which human beings throughout history have created order and attempted to reduce uncertainty in exchange. Together with the technology employed, they determine transaction and transformation costs and hence the profitability and feasibility of engaging in economic activity.
>
> . . . .
>
> . . . It concerns the endless struggle of human beings to solve the problems of cooperation so that they may reap the advantages not only of technology, but also of all the other facets of human endeavor that constitute civilization.[4]

The problem of cooperation is dramatically affected by new communications technologies because they transform the logic of collective action.[5] The need for cooperation and organization, however, does not disappear, but the ability to achieve cooperation and organization is transformed.

The framework of analysis for the organizational challenges of structured viral communications is taken from the work of Elinor Ostrom, another Nobel laureate in economics, whose work is founded on a critique of neoclassical economics. Ostrom has identified the critical challenges in organization/institution building and has shown that communications are critical to building durable institutions to solve the problem of managing "common pool resources" ("CPR").

> In CPR dilemmas where individuals do not know one another, cannot communicate effectively, and thus cannot develop agreements, norms, and sanctions, aggregate predictions derived from models of rational individuals in a noncooperative game receive substantial support. These are sparse environments . . . .

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4. DOUGLASS C. NORTH, INSTITUTIONS, INSTITUTIONAL CHANGE AND ECONOMIC PERFORMANCE 118, 133 (1990).

5. Arthur Lupia & Gisela Sin, *Which Public Goods are Endangered?: How Evolving Communication Technologies Affect the Logic of Collective Action*, 117 PUB. CHOICE 315, 329 (2003).

. . . .

> . . . In richer environments that vary from the institutionally sparse homeland of noncooperative game theory. . . [s]imply allowing individuals to talk with one another is a sufficient change in the decision environment to make a substantial difference in behavior . . . .[6]

The recognition of shared interest—the collective payoff that flows from cooperation—also plays a key role in the analysis of social organization to cooperatively exploit the CPR.

> When substantial benefits can be gained by arriving at a joint plan of action for a series of future interactions, individuals may have in their repertoire of heuristics simple sharing rules to propose, backed up by a presumption that others will use something like a measured response. If in addition, individuals have learned how a monitoring and sanctioning system enhances the likelihood that agreements will be sustained, they are capable of setting up and operating their own enforcement mechanism.[7]

> [A]ppropriators of a common resource might take into account more than the individual benefits and costs they receive from following or breaking the rules that coordinate resource use. If they include the opportunity costs of foregone joint benefits and the expected costs of developing new rules if defecting behavior leads to the breakdown of existing arrangements, appropriators may recognize incentives to maintain those arrangements by adopting a cooperative strategy over numerous iterations.[8]

Digital disintermediation breaks down incumbent social and economic relations of production, but establishing durable new relations requires institution building. This paper is organized as follows: Part I presents an overview of the argument, relying on graphic presentations and a critique of the "Internet fairytale." Part II is a study of the music sector, the first major example of digital disintermediation. This part provides an analysis that highlights the economic aspects of a sector that resisted the transformation. It also provides context for a critique of the "copyright-holder sob story." Part III examines the Obama campaign as an example of structured viral communications that voluntarily embraced a powerful new approach to organization in order to achieve a goal in a

6. ELINOR OSTROM ET AL., RULES, GAMES, & COMMON-POOL RESOURCES 319-20 (1994).

7. *Id*. at 220.

8. *Id*. at 296.

non-economic context. Finally, the conclusion summarizes three broad points to be gleaned from the institutional economic analysis.

I. THE TRANSFORMATIVE POWER OF STRUCTURED VIRAL COMMUNICATIONS

A. Viral Communications Overwhelms Centralized Communications

As shown in the top graphs of Figure I-1, Chris Anderson first argued that, in cyberspace, the long tail of the distribution of commercial activity is where the action would be because the declining costs of search, storage and distribution meant that less popular products would have more shelf space and a longer shelf life.[9] He later argued that *Free* would be the basic model of digital transactions.[10] He failed, however, to appreciate the impact of the explosion of communications that would inundate the transactions on which his formulation focused (the bottom graph of Figure I-1).

The problem with Anderson's initial long tail argument is that it was still essentially a one-to-many formulation (as shown in the top left graphic of Figure I-2). While technology made it cheaper and easier to execute communications, transactions still involved a central source transacting with individual customers. In reality, lowering the cost of transactions between a centralized source and consumers on the edge of the network is much less important than the ability of people at the edge to engage directly in transactions or conversations with one another, i.e. the many-to-many essence of Internet communications (the top right graph of Figure I-2).

Consequently, the ability of individuals to communicate overwhelms any linear effects of cost reduction. David Reed has called this the "sneaky exponential."[11] Reed's formulation of the sneaky exponential pointed out that with even modest numbers of people connected, potential conversations increased dramatically. He was criticized by some who argued that the number of potential conversations overwhelmed the capacity of individuals to engage in communications.[12]

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9. *See* CHRIS ANDERSON, THE LONG TAIL: WHY THE FUTURE OF BUSINESS IS SELLING LESS OF MORE 6, 9-10 (2006).

10. ANDERSON, *supra* note 1, at 3, 5.

11. David P. Reed, *That Sneaky Exponential – Beyond Metcalfe's Law to the Power of Community Building*, http://www.reed.com/dpr/locus/gfn/reedslaw.html (last visited Oct. 12, 2010); *see also* David P. Reed, *Exponents of Change: How Scale Creates Value in Network Communities*, http://www.reed.com/dpr (last visited Oct. 12, 2010); *see also* David P. Reed, *The Law of the Pack*, HARV. BUS. REV., Feb. 1, 2001, at 23-24.

12. Bob Briscoe, Andrew Odlyzko & Benjamin Tilly, *Metcalfe's Law is Wrong*, IEEE Spectrum, July 2006, at 34.

The central point of his argument, though, was that the freedom to communicate maximizes individual, and therefore social, value. Individuals choose more valuable conversations and have more of them.

The explosion of viral communications provides an opportunity for organization because the conversations need not be random (the bottom graph in Figure II-2). From a network perspective, chaotic viral communications may not be efficient. Carefully structured communications allow more and higher value communications to take place.[13] Robust, multi-scale networks achieve significantly greater efficiencies in the use of communications resources than a purely many-to-many network, while allowing more communications to take place at much lower resource cost than in a one-to-many network. I call this hybrid, structured viral communications. The ease of communications alters the logic of collective action, while structure renders the network more efficient.

The exponential explosion of viral, many-to-many communications on the edge quickly overwhelms the dominance of the firms at the center of the one-to-many network. First, the freedom to communicate changes the terms of trade and undermines the ability of the center to control resource flows. A simple count of transactions may continue to show a long tail structure, but the nature and value of the transactions shifts. Having a large market share as depicted by the power curve rule[14]—80 percent of the transactions are accounted for by 20 percent of the firms—is less meaningful when the consumer can easily switch suppliers. Under these circumstances, the transaction is not one of extracting surplus from consumers; it is one of capturing transactions by making them attractive. In the music case, for example, one can argue that the largest labels still account for a high percentage of the transactions, although it has declined, but more importantly, the value of those transactions has been cut by two-thirds because they have lost control over communications.

The key for the Obama campaign was to first train people, secure their commitment and then reward them with access to centralized tools and resources that allowed them to be more effective in performing the activities *they* wanted to conduct. The volunteers were self-selected and self-motivated, while the center gave encouragement and support rather than orders. The support was not random but given to specific individuals, identified on a decentralized basis, who appeared to be reliable and potentially productive agents. These identified agents then

13. *See* Mark N. Cooper, *Making the Network Connection*, *in* OPEN ARCHITECTURE AS COMMUNICATIONS POLICY, 131-32 (Mark N. Cooper ed., 2004).

14. *See generally Power Law*, WIKIPEDIA, http://en.wikipedia.org/wiki/Power_law (last visited Oct. 12, 2010) (reference article includes an example power law graph demonstrating the 80-20 rule).

had the autonomy to engage in activities at the edge. It was a light hand of hierarchy and organization that channeled the viral energy toward a goal.

B. The Challenges and Advantages of Structured Viral Organizations

Structured viral communications captured for organizational purposes convey a general set of advantages in the form of transaction cost reductions and demand side value creation (see Table I-1). Using local knowledge and allowing consumers to be producers who self-organize on the network, structured viral communications achieve a better fit between consumer needs and output at a lower cost with increased option value. Additionally, there is a supply-side component: The general transaction cost processes can be brought to bear on the exploitation of specific resources. Individuals engage in a productive process to exploit a resource, using the more powerful communications to achieve a benefit. Table I-1 applies the general framework to four examples, each of which is grounded more heavily in one of the primary aspects of social order. For example, an open mesh network is a technology-centered solution that uses embedded coordination in devices to occupy the local spectrum dynamically, thereby utilizing it more intensively. Open source software uses embedded knowledge to share code and exploit the rich information available in a community of programmers. The two detailed studies presented in this article expand on examples that emphasize the economic (music) and political (Obama campaign) realms of society.

Overcoming organizational challenges is the key to success (see Table I-2). Table I-2 is based on Elinor Ostrom's characterization of the ways in which groups organize themselves to effectively exploit common pool resources. In order to form an effective organization to exploit a common pool resource on a sustainable basis, she argues that each of the challenges must be overcome in a coherent manner. Communication is the key to successful organization.

The ability to communicate and exchange information is central to the ability to organize around shared interests and take collective action. Positions (roles) with identifiable permitted activities (rights and obligations) are filled according to boundary (entry) conditions where rewards induce participation and enforcement maintains appropriate behavior. The life blood of the organization is a continuous flow of information to members about the status of the organization and behaviors to alert the members and those charged with maintaining the integrity of the organization.[15]

15. It may well be that the literature on collective action was always too pessimistic. The

This is where Anderson's second analysis goes wrong as a guide to institutionalizing economic organization. It is a mistake to claim that things are free or that there need be no organization. In fact, he knows otherwise. While the title of the book is "Free," it turns out that the whole book is a discussion of the shell game of cost recovery engaged in by clever capitalists (see Table I-3). They shift cost recovery across time, space and products to give the illusion of *free*. They cannot succeed without covering their costs and they cannot cover their costs without establishing durable economic relations. Those relations require the parties to the transaction to know what has been conveyed and, where cost recovery is shifted, commitment and enforcement. Each cost recovery scheme has problems from the firm's point of view and, in several respects, from the societal point of view.

By skipping over or downplaying the hard organizational challenges, Anderson creates a false dichotomy between scarcity and abundance (see Table I-4). While scarcity is certainly the wrong model, imaginary abundance based on a "don't worry, be happy" or "we'll figure it out" approach is not likely to elicit a sustainable outcome. New institutional economics and the analysis of common pool resources indicate it is vital to achieve the cooperation necessary to exploit technology.

While the new institutional economics is grounded in criticism of neoclassical economics, it recognizes the contribution that neoclassical analysis can make in the study of efficiency in production costs. This paper does so too, basing the analysis of the transformation in the music sector on a traditional economic analysis.[16] The study of the music sector shows how digital disintermediation can break down incumbent economic institutions. The study of the Obama campaign shows how digital disintermediation can be used to create a powerful organization by tapping into the power of viral communications.

II. DIGITAL DISINTERMEDIATION IN THE MUSIC SECTOR

In April 2006, *The Journal of Law & Economics* published a symposium on "Piracy and File Sharing"[17] that outlined many of the major analyses that had played a role in the intense file sharing policy debate following the famous peer-to-peer file-sharing case, *MGM Studios, Inc. v. Grokster, Ltd.*[18] After another half-decade of further

study of common-pool resources is rich with examples from physical space. The recognition of shared interest—the collective payoff that flows from cooperation—also plays a key role. *See* OSTROM ET AL., *supra* note 6, at 148.

16. *See generally* F.M. SCHERER & DAVID ROSS, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 4-14 (3d ed. 1990).

17. Symposium, *Piracy and File Sharing*, 49 J. LAW & ECON. 1 (2006).

18. 545 U.S. 913 (2005).

developments, it has become clear that there was a lot more going on than "piracy."

Early studies on the impact of peer-to-peer file-sharing were all over the map. Some studies found increases in sales as a result of stimulation in certain population segments (e.g. older consumers) that offset losses in others (e.g. younger users).[19] Other studies found that file-sharing had little or no effect.[20] Still others found losses that were not large.[21] Some concluded that because of recording industry pricing practices, even where recording industry revenue declined as a result of file sharing, consumer welfare may have increased.[22] One econometric study of downloading found that the increase in consumer surplus was almost 200 percent larger than the loss of industry revenue.[23]

This ambiguous empirical outcome from an analytic point of view is perfectly predictable from a theoretical point of view. Several potentially positive impacts of file-sharing have been suggested, including sampling and networking.[24] These impacts are especially prominent, where, as here, the industry previously had not been vigorously competitive,[25] and new technologies both dramatically reduced costs and enhanced the consumer experience. Accordingly, every downloaded song need not represent a lost sale. As shown below, there are many songs that would not have been purchased if their cost were not bundled into CDs.

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19. Eric S. Boorstin, Music Sales in the Age of File Sharing (April 3, 2004) (unpublished thesis, Princeton Univ.) (on file with Princeton Univ., Dep't of Computer Sci.).

20. Martin Peitz & Patrick Waelbroeck, *The Effect of Internet Piracy on CD Sales: Cross-Section Evidence* 13-14 (CESifo, Working Paper No. 1122, 2004); *see also* Martin Peitz & Patrick Waelbroeck, *An Economist's Guide to Digital Music* 31 (CESifo, Working Paper No. 1333, 2004) [hereinafter Peitz & Waelbroeck, *Guide*]; *see also* Alejandro Zentner, Measuring the Effect of Online Piracy of Music Sales 16-17 (June 28, 2003) (unpublished manuscript) (on file with Univ. of Chicago Dep't of Econ.); *contra* Stan J. Liebowitz, *Pitfalls in Measuring the Impact of File-Sharing on the Sound Recording Market*, 51 CESIFO ECON. STUDIES 439, 475-76 (2005) [hereinafter *Pitfalls*].

21. Zentner, *supra* note 20, at 4, 17; *see also* Stan Liebowitz, *Will MP3 Downloads Annihilate the Record Industry? The Evidence so Far*, *in* 15 ADVANCES IN THE STUDY OF ENTREPRENEURSHIP, INNOVATION, AND ECONOMIC GROWTH INTELLECTUAL PROPERTY AND ENTREPRENEURSHIP (Gary D. Libecap ed., 2004).

22. Rafael Rob & Joel Waldfogel, *Piracy on the High C's: Music Downloading, Sales Displacement, and Social Welfare in a Sample of College Students* 3, 27 (Nat'l Bureau of Econ. Research, Working Paper No. 10874, 2004).

23. Mark Cooper, Dir. of Research, Consumer Fed'n of Am., Ctr. for Internet and Soc'y, Remarks at the Telecommunications Policy Research Conference: Round #1 of the Digital Intellectual Property Wars: Economic Fundamentals, Not Piracy, Explain How Consumers and Artists Won in the Music Sector (Sept. 26-28, 2008).

24. Ram D. Gopal et al., *Do Artists Benefit From Online Music Sharing?*, 79 J. BUS. 1503, 1524, 1529 (2006); *see also* Michael X. Zhang, A Review of Economic Properties of Music Distribution 14 (Nov. 15, 2002) (unpublished manuscript) (on file with Mass. Inst. of Tech.); *see also* Peitz & Waelbroeck, *Guide*, *supra* note 20, at 12, 29-30.

25. *See* Peter J. Alexander, *Market Structure of the Domestic Music Recording Industry, 1890–1988*, 35 HIST. METHODS 129, 129 (2002).

Sampling of individual songs through downloads allows consumers to experience new music and discover its value and could thus actually increase sales of CDs. Further, there is evidence that lower value songs are more likely to be downloaded than higher value songs.[26] Accordingly, some downloads would never have been purchased and thus do not represent lost sales. There is evidence that downloaders in high purchase groups may purchase a CD after downloading some songs, and that downloading increases purchases in those demographic groups least likely to purchase (i.e. respondent above the age of 25 compared to those below the age of 25).[27] Downloading may also stimulate purchases of complementary and related goods and services, and thus may ultimately expand the market for legitimate purchases of content for newly acquired equipment (such as an MP3 player) or for goods and services related to albums (such as live concerts). Because these revenue streams have not traditionally been the focus of the major record labels, artists may become the primary beneficiaries, those directly receiving revenues, rather than record companies.[28]

The public policy problem is rendered complex by the fact that the ultimate issue is not whether some revenues have been lost as a result of peer-to-peer communications networks, but whether the losses have been enough to threaten the viability of the industry[29] and whether any new business models or industry structure might better serve the public and the promotion of progress.[30]

After studying repeated historical examples of technological changes that lead to outbreaks of competition in the recording industry, Peter J. Alexander offered an analysis of the potential cost savings and the "exponential" increase in product creativity afforded by new digital technology that was still a decade away.

> A distribution network of this type may potentially attenuate the effects of the significant barriers to entry in the music business. First, it could give firms (particularly fringe firms and new entrants) the

26. *See* Rob & Waldfogel, *supra* note 22, at 15-16, 22-25; *see also* Brief for Felix Oberholzer-Gee & Koleman Strumpf as Amici Curiae Supporting Respondents at 7, MGM Studios, Inc. v. Grokster, Ltd., 545 U.S. 913 (2005) (No. 04-480).

27. Boorstin, *supra* note 19, at 60-62; *Pitfalls*, *supra* note 20, at 465 (disagreeing with some of the specifications used in Boorstin's statistical study, but nonetheless finding that Boorstin's conclusion would have remained the same).

28. *See* Amit Gayer & Oz Shy, *Publishers, Artists and Copyright Enforcement,* 18 INFO. ECON. & POLICY 374, 380-82 (2006).

29. Liebowitz, *supra* note 21, at 253 (even Liebowitz recognizes that this "[h]arm is not the same as fatal harm . . . .").

30. Mark S. Nadel, *How Current Copyright Law Discourages Creative Output: The Overlooked Impact of Marketing*, 19 BERKELEY TECH. L.J. 785, 855-56 (2004); Raymond Shih Ray Ku, *The Creative Destruction of Copyright: Napster and the New Economics of Digital Technology*, 69 U. CHI. L. REV. 263, 322-24 (2002).

> opportunity to have their products distributed in a less costly and non-exclusionary fashion. By providing product samples to consumers, the new distribution network would also transmit information relating to product specifications. This would lessen the need for more traditional and less efficient techniques, such as radio airplay and other costly promotional activities, to inform consumers of the existence of new products. Given the modest marginal costs of adding a new product line to a digital delivery system, it is conceivable that the number of product offerings could increase exponentially. The costs of distribution should decline dramatically, as physical distribution at national or international levels has significant scale features. A competitive digital delivery system would reduce substantially the minimum efficient scale of distribution, and likely stimulate a highly competitive producer market.[31]

Alexander was able to predict the development in the industry once it was forced to embrace digital distribution. The key word is "forced." The industry did not willingly make these changes.

A. The Tight Oligopoly in the Physical Music Business

1. Collusion on Price

Any analysis of the economic impact of digital distribution on the recording industry must start by understanding the structure and conduct of the industry in the years just prior to the digital revolution. The picture was not pretty—a tight oligopoly able to engage in the exercise of market power.[32] This collusive power was verified by two lawsuits, one by the Federal Trade Commission[33] and one by state Attorneys General,[34] both of which were settled in 2000 and 2002 respectively. The complaint filed by forty-one state Attorneys General made the following

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31. Peter J. Alexander, *New Technology and Market Structure: Evidence from the Music Recording Industry*, 18 J. CULTURAL ECON. 113, 121 (1994) [hereinafter *Evidence*].

32. Peter J. Alexander, *Peer-to-Peer File Sharing: The Case of the Music Recording Industry*, 20 REV. OF INDUS. ORG. 151, 151 (2002) ("The music recording industry is a highly-concentrated five firm oligopoly. Much of the dominance achieved by large firms in the industry results from control over the distribution and promotion of the [products] of the industry."). Hollywood major movie studios and recording companies have long understood that their profits are directly tied to their ability to monopolize distribution. After all, they are not the creators of the copyrighted works at issue; they are simply the assignees and licensees of copyrighted works. As such, they have but a single means for deriving revenue: control of distribution. Note that a subsequent merger rendered the industry a four firm oligopoly.

33. *See* Statement of Chairman Robert Pitofsky and Commissioners, In the Matter of *Time Warner Inc*. et. cetera, (File No. 971-0070, May 10, 2000), *available at* http://www.ftc.gov/os/2000/05/cdstatement.htm.

34. *See* In re Compact Disc Minimum Advertised Price Antitrust Litig., 2001 U.S. Dist. LEXIS 25817 (D. Me. Jan. 26, 2001).

allegations that the music labels had colluded to raise prices.

> 3. The purpose of the illegal agreements was to raise prices and reduce retail price competition that threatened the high and stable profit margins for CDs enjoyed by both the defendant labels and distributors and many music retailers.
>
> . . . .
>
> . . . 4. This competitive threat arose with the entry into music retailing of several discount retailers (for example, Best Buy, Circuit City and Target), which could profitably undercut the prevailing retail prices charged for CDs by traditional retailers. Consumers flocked to the discount retailers that rapidly gained market share at the expense of traditional retailers.
>
> . . . .
>
> . . . 5. The traditional retailers reacted by pressuring defendant distributors to impose minimum advertised pricing ("MAP") policies which established the retail price levels at which CDs were sold, thereby effectively reducing and/or eliminating retail price competition for CDs. . . .
>
> . . . .
>
> . . . 7. The effect of these anticompetitive agreements has been twofold. First, retail CD prices, which had been dropping, were stabilized and then raised industry-wide. Second, the oligopoly of defendant distributors was able to maintain high wholesale prices and margins for CDs. As a result of both effects, consumers have paid higher prices for CDs than they would have absent the illegal agreements. . . .
>
> . . . .
>
> . . . 51. [T]he defendant distributors transformed their MAP programs into blunt and effective instruments for putting an end to price competition . . . ."[35]

This collusion was a response to competition. The compact disc entered the market in the mid-1980s, constituted a quarter of total sales by 1990, and three-quarters by 1995.[36] Competition arrived in the early

35. Complaint at ¶¶ 3-5, ¶ 7, ¶ 51, *In re Compact Disc Minimum Advertised Price Antitrust Litigation*, 2002 WL 32947273 (D. Me. Oct. 15, 2002) (No. 1361).

36. Cooper, *supra* note 23, at 7.

1990s as the CD format became more popular; it was a new technology of distribution that had lower cost and was easier to store and handle. As shown in Figure II-1, this competition drove prices down "from $15 to $10 in a short period of time."[37] As a result, "[d]iscount retailers' sales grew dramatically . . . ."[38] The list prices in Figure II-1 do not reflect the significant discounting that was going on prior to the mid-1990s just before the industry engaged in its price fixing scheme to stop the practice. Nevertheless, total sales grew dramatically. In fact, this pre-mid-1990s period of price competition saw a faster rate of sales growth than any other time over the prior thirty years.[39] Prices fell by forty percent and sales more than doubled (see Figure II-2).

The biggest gains in sales came in the early 1990s when list prices were at their low and the big discount outlets were slashing prices even further. In addition to the price competition that had broken out, the expansion of sales was also the result a shift in technology, which stimulated library replacement as consumers switched from vinyl or tape cassette to CD. The expansion affirms the importance of the price elasticity of demand in the music sector: "All major labels report that moving albums to mid- or budget-pricing increases sales significantly."[40] Consequently, the failure to recognize the price elasticity of demand has distorted the analysis of the digital transition in the music sector.

When collusive discipline was applied as a result of the recording industry's control over physical distribution, "retail and wholesale price increases occurred despite the fact that, as the records of one music company reveal[ed], per-CD unit costs had decreased sharply during the 1990s."[41] The benefits of economies of scale and falling costs that should have been passed through to consumers in a competitive market were instead redirected to suppliers through price-fixing. The the anti-competitive behavior of the industry as it sought to control discounting had an immediate and substantial effect on prices.

> . . . By June 1996 *Billboard* reported, "Thanks to the majors' new-found resolve on MAP [Minimum Advertised Prices], prices of hit CDs at discount chains rose by $2 to $11.99 over the last month." In the meantime, NARM [the National Association of Recording Merchandisers] reported that the average price paid by their SoundData Consumer panel during the period of December 1995 through February 1996 was $13.64, up from $12.71 in the previous

37. *Id.* at ¶ 39.
38. *Id.* at ¶ 40.
39. *Pitfalls*, *supra* note 20, at 458.
40. GEOFFREY P. HULL, THE RECORDING INDUSTRY 179 (2nd ed. 2004).
41. Complaint, *supra* note 35, at ¶ 75.

survey.[42]

While these particular anticompetitive practices were enjoined both in 2000 by the Federal Trade Commission and in 2002 by the state Attorneys General, today the industry still remains a tight oligopoly with suspect business practices.[43]

2. Anti-Consumer Bundling

The manipulation of CD prices was combined with a second strategy to further exploit consumers. Throughout the 1990s, even though production costs were falling, the recording industry all but eliminated the sale of singles. In effect, consumers were forced into paying too much for CDs that contained extra content they did not actually want. In the 1980s, sales of singles had been in the hundreds of millions and, with declining production costs, could have remained high. The industry, however, sought to increase its profits by restricting the availability of singles. Implementing this strategy caused sales volumes of singles to fall by 90 percent, as shown in Figure II-2

Prior to the 1990s, the single allowed consumers to cost-effectively meet their needs while stimulating sales through the purchase of individual songs which consumers could use to "try out" an artist.

> At one time, singles made up a hefty part of the recording industry's income. . . . But things have changed. Record companies want consumers to buy full length CDs when they fall in love with a song. So they've shut off the spigot when it comes to releasing less expensive commercial singles to retail.
>
> The debate rages. Labels insist they simply cannot make a big enough return if fans are buying $3 singles instead of $16 albums. Retailers, though, fume that they are suffering without singles, which have historically increased foot traffic in stores, especially among younger shoppers.
>
> Labels like the single when it suits their purposes; during parts of the overheated 1990s, labels released them in floods at deeply discounted prices to help promote blockbuster albums and claim fanciful new

42. HULL, *supra* note 40, at 183 (citation omitted).

43. *See* ELI NOAM, MEDIA OWNERSHIP AND CONCENTRATION IN AMERICA 129 (Oxford Univ. Press, 2009); *see also* Bill Werde, *Major-Label Payola Probe*, ROLLINGSTONE, Nov. 25, 2004, at 15-17; Peter J. Alexander, *Entry Barriers, Release Behavior, and Multi-Product Firms in the Music Recording Industry*, 9 REV. OF INDUS. ORG. 85, 92-93 (1994) (where the importance of promotion and radio play is emphasized).

> sales records . . . .
>
> . . . .
>
> . . . But that was then, this is now, and the music fans are the losers.[44]

A look at the long-term trend in single sales easily supports the conclusion that a large part of "piracy" is the result of demand that was suppressed by the exercise of market power to eliminate singles (see Figure II-3). Singles had already gone through two transitions (i.e. vinyl to cassette and cassete to CD), but the industry had all but eliminated them by the late 1990s, creating a pent-up demand that exploded once the digital distribution model took hold. Single sales had been well above 150 million in the late 1980s and above 200 million in the 1970s.[45] Digital distribution amplified the attractiveness of the singles through convenience, portability, and consumer control. With the decline in the price of CDs, sales of singles to the tune of 400 million could well have been achieved, suggested by Figure II-3.[46]

The combination of high prices due to anticompetitive collusion and the elimination of the single in order for the new full-album CD format to thrive created a windfall for the record labels. "'The record companies minted money,' one major-label exec told [reporter Seth Mnookin]. 'We made huge margins off CDs. We'll never have those margins again.'"[47]

A survey of consumers at the time of the consent decree signed with the Federal Trade Commission in 2000 revealed significant consumer dissatisfaction with recording industry pricing.[48] Three-quarters of respondents felt that pricing levels were unreasonable and almost as many felt they were excessive compared to other forms of entertainment.[49] The respondents said they would increase their purchases of music if prices fell substantially and almost all respondents said they would be unwilling to buy digital downloads at the same price as CDs. The public was clearly not satisfied.

Because it relied on a series of erroneous assumptions, the recording

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44. Eric Boehlert, *Why the Record Industry is Killing the Single*, SALON.COM, Dec. 19, 2001, http://dir.salon.com/ent/music/feature/2001/12/19/music_industry_sidebar/index.html.

45. Cooper, *supra* note 23, at 25.

46. This represents one-third of units shipped, which is the level of sale of singles in the mid-1980s.

47. Seth Mnookin, *Universal's CEO Once Called iPod Users Thieves. Now He's Giving Songs Away*, WIRED, Dec. 2007, at 209.

48. Michele Wilson-Morris, *28 States Sue Major Labels and Retailers Over Alleged Price Fixing Conspiracy*, MUSIC DISH (Aug. 8, 2000), http://www.musicdish.com/mag/?id=1411.

49. *Id.*

industry put forward vastly overblown claims of piracy and revenue loss (see the industry aspiration line in Figure II-2, above). First, the industry assumed that the bubble of sales created in the early 1990s by library replacement would continue. At the same time, the industry intended to preserve its anticompetitive pricing structure to maintain the jacked up price of CDs despite the dramatic reduction in costs made possible by digital production and distribution. Further, the industry hoped its policy of forcing consumers to buy bundles of songs rather than singles could be maintained despite the dramatically-altered economics of music distribution in favor of digital singles.

B. The Emergence of a Digital Music Business

1. The Transaction Cost Transformation

The world of physical distribution is still characterized by high fixed costs and near-zero marginal cost. Therefore it is still good business to put as much content as one can on each CD, even accounting for the fact that the CD's cost of distribution has declined. With the advent of digital distribution, however, fixed costs of distribution all but disappear, physical infrastructure is no longer necessary, and transaction costs are significantly slashed. Accordingly, the compelling economic logic of bundling disappears. The result is that revenue per unit shipped plummeted (See Exhibit III-4). Although the total number of units purchased by the public has increased sharply, the vast majority of units sold are now singles and the average price per unit sold has declined by seventy percent.

The digital transformation also goes beyond the impact of cost reduction and the elimination of the exercise of market power. Demand shifts as a result of both production and transaction changes. Flexible new consumer-friendly formats expand demand and take the experience of music consumption to another level.

> The rise of the compact disc (like the rise of cassette tapes before them) demonstrated the market appeal of flexibility and convenience. CDs weren't a hit because they had the best audio fidelity; that honor still belongs to vinyl records. Rather, they gave consumers more control over the listening experience. If you wanted to replay your favorite song (or skip a crappy one), you didn't have to bother with delicately moving a phonograph arm or engaging in a frustrating rewind-stop-play-stop-rewind tango with your tape player. Everyone

came out a winner.[50]

With the ability to choose singles, consumers can spend a lot less to get the music they want. In 2009, according to the RIAA, consumers spent about $1.2 billion on singles, $1 billion for subscription and mobile services and about $4.3 billion on albums.[51] In other words, consumers are meeting their music needs in a much more convenient way at less than half the cost. The recording industry would have liked to force them to spend as much as $13 billion more for three times as many albums, along the high growth line in Figure II-2, which is the future the industry claimed absent downloading. Of course, we do not know how many albums consumers would have actually purchased if the recording industry had won its war against digital distribution. However, the industry's hope for very high rates of growth in album sales with inflated prices was likely too optimistic.

We do not know precisely how many singles that consumers buy per album; although, we do know the number is small (one to three). If we assume consumers buy albums for two favorite songs, consumer savings from the availability of singles would be as high as $9 billion. If we assume three songs per album, consumer savings would be about $5.6 billion. While there are uncertainties due to different assumptions about growth patterns and the number of songs consumers would purchase per album in a non-digital world, there is no doubt that the consumer savings are quite large. These figures represent substantial savings in an industry with total sales of about $7 billion.

2. The Artists' View

It is a frequent lament in the music industry that few albums and almost no artists ever make any money on the sale of records. The income gap between the handful of "stars" and the remaining vast body of artists is huge. The range of works that are widely played and circulated is narrow. Under the music industry's traditional model, a handful of companies selected a small number of releases and promoted them heavily, marketing them through expensive distribution channels.

The costs of the distribution system that the recording companies controlled placed a huge drag on the market (see Figure III-5). The average price per CD in 2001 was about $17.99, while the cost of producing a CD in quantity was $0.50.[52] The average amount an artist

50. Mnookin, *supra* note 47.

51. RECORDING INDUSTRY ASS'N OF AMERICA, 2009 YEAR-END SHIPMENT STATISTICS, *available at* http://76.74.24.142/A200B8A7-6BBF-EF15-3038-582014919F78.pdf.

52. Cooper, *supra* 23, at 12.

receives per unit sold is $0.12.[53] Some sources put the artist share somewhat higher, but not much more than a dollar, net of costs.[54] Factoring in the composer, performer and producer shares of the CD price, an artist will ultimately get between twelve to sixteen cents of every dollar the consumer paid. Thus, the intermediaries that stand between the musician and the audience account for about eighty-five percent of the final price.

Manufacturing, distribution and retail account for over half of the final price of the CD. These costs are all but eliminated with digital distribution. Another quarter of the cost—record company overhead, marketing and profits—are vulnerable to sharp reductions in an environment that emphasizes horizontal structure and peer-to-peer communications. Thus, three-quarters of the costs and the central point of control are eliminated, signaling the end of the highly skewed traditional star system.

The recording companies that control distribution have an incentive to maximize profits by focusing on a few blockbuster albums and stars.[55] Those who have control of music distribution have incentive to sell the music that can bring them the most revenue. They consequently distort the market by extensive and disproportional promotions in favor of a small number of works. The overwhelming advertising campaign may further skew the consumers' preferences and lead to distorted demand.

> In essence, music consumers do not have accurate information on the quality of the music because the music is an experience good. Music publishers, because of the delay in obtaining market information for all of their music, may overinvest in certain music genres and underinvest in others. A typical strategy to overcome the inefficiencies and uncertainties in the market is to focus on the superstars.[56]

The brunt of these inefficiencies falls on the artists. High costs and the incentive to focus on a narrow range of output reduces demand for the product overall and narrows the prospects for most artists.[57]

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53. Bill Wittur, *Selling Minor Chords in Exchange for a Happy Tune*, MUSIC DISH, Dec. 12, 2004, http://www.musicdish.com/mag/index.php3?id=4859.

54. WILLIAM FISHER, PROMISES TO KEEP: TECHNOLOGY, LAW AND THE FUTURE OF ENTERTAINMENT 259 (2004); DEREK SLATER ET AL., BERKMAN CTR. FOR INTERNET & SOCIETY AT HARV. LAW SCH., CONTENT AND CONTROL: ASSESSING THE IMPACT OF POLICY CHOICES ON POTENTIAL ONLINE BUSINESS MODELS IN THE MUSIC AND FILM INDUSTRIES AI-4 (2005).

55. Michael X. Zhang, *A Review of Economic Properties of Music Distribution*, at 5 (Sloan Sch. of Mgmt., MIT, Working Paper No. L82, 2002).

56. Gopal et al., *supra* note 24, at 1507.

57. *See* Evidence, *supra* note 31, at 121.

Figure III-5 also includes an estimate of the recording company take on digital distribution in its early days. The companies did not give up their rents easily. While the hard costs of distribution declined, the companies pushed up their share of the total delivered price, seeking to turn the eliminated costs of manufacturing, distribution and retail into record company rents. The large increase in record company take shown in Figure III-5 may even be too low because the companies may take charges against artist royalties. While these charges against artist royalties have always been a bone of contention, the advent of digital technology has rendered many of these charges utterly fictitious in the online environment.[58]

From the artists' point of view, the benefits of the transformation are also readily explained in classic welfare economic analysis. In the oligopoly environment, producer surplus is inflated by high cost products and results in the large surplus earned by a small number of recording companies that produce "high value" blockbuster albums. In the digital environment, producer surplus is much smaller per unit, but made up of the much larger low cost output earned by less well-known artists. Using the midpoint estimate of fourteen percent of the retail price of a CD going to the artists (composers and performers), we estimate that about $1.1 billion of the revenue from CDs went to artists in 2007. Apple, contrarily, takes about thirty percent of the digital sales revenue, returning seventy percent to artists, representing just under $2 billion for artists in 2007.[59] Some of that must go toward administrative and other costs, so the artists end up with about $0.50 per track or about $1.4 billion on digital singles. The big difference on the supply side is the much broader range of artists to whom the surplus goes. If the oligopoly model had prevailed by expanding the sales of CDs, the artists' share of the producer surplus would have been larger, but much more narrowly distributed.

> [British hip-hop artist Taio Cruz]'s latest album, "Rokstarr," has sold just 93,000 copies in 12 weeks, according to Nielsen SoundScan, and this week sits at No. 54 on the Billboard 200 chart.

58. HULL, *supra* note 40, at 259-260 ("[L]abels typically deduct a packaging charge, twenty-five percent for CDs, even from digital files where there is no packaging. Labels also typically pay a rate for singles that is lower than the album base rate, often seventy-five to eighty percent of the album rate. Labels also pay a lower rate on "new technologies"; also often seventy-five to eighty percent of the base album rate. If all of those deductions were taken, the artist's and producer's combined royalty would shrink to about 4.2 cents per download. Some major artists objected to this small portion of the small pie.").

59. Cooper, *supra* 23, at 22.

> But while he has sold relatively few albums, he has sold 4.9 million copies of two singles from the album, "Break Your Heart" and "Dynamite," and videos for those singles have been viewed more than 49 million times online. For his label, Mercury Records, that means he is a commercial success.[60]

For the artist today, as seen in the above example, commercial success rests on sales of singles (for which consumers paid about $5 million, instead of over the $35 million they would have had to pay to purchase full albums) and video views (from which advertising revenues may be garnered).

Album sales were never the primary way most artists earn their living. Rather, artists earn their living by getting play time, which makes it possible to sell more songs, perform more shows and sell more merchandise (see Figure II-6). The mechanism through which the vast majority of artists became beneficiaries of the new market structure is easily explained by the reduction of transaction costs. Digital distribution expands the opportunity to engage in each of these activities. Collaboration between artists and contact with fans is increased, and the ability to be heard expands through easier promotion, viral communications and sharing. Playtime, which used to be largely restricted to radio (and hemmed in by repeated payola scandals), has exploded on the Internet. Online plays represent a new distribution channel that opens up the opportunity for direct sales from artists to consumers. Figure II-6 shows the percentage of respondents to a recent Pew Internet and American Life Project poll on the use of the Internet in regard to acquisition of music and conduct of music related activities. The behavior has become pervasive. Consequently, "If the demand for, say, live performances is enhanced by the "popularity" of the artists generated from the number of distributed recordings (legal and illegal copies combined), then we obtain the conditions under which publishers of recorded media may lose from piracy, whereas artists may gain from piracy."[61]

Morever, entirely new avenues for revenues have opened up for artists.

> The singer-songwriter Dave Barnes, an artist signed to Razor and Tie, has never broken the top 50 in the Billboard 200. But Mr. Barnes found success on Christian radio and landed a deal with SongFreedom.com, a site that provides music to wedding photographers and videographers.

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60. Joseph Plambeck, *Platinum Is So Passé. In iTunes Era, the Singles Count*, N.Y. TIMES, Aug. 30, 2010, at B1.

61. Gayer & Shy, *supra* note 28, at 375-76.

> The commercial success of that deal, according to Mr. Chenfeld, is not reflected on the Billboard 200, even though its revenue is "considerable, and opportunities like that are viral."
>
> "The reliance on album sales is very 20th century," he said.[62]

The dramatic improvement in the discovery and information function of the market expands sales as well. This is a process that needs to be given more credit in the transformation. We tend to think about the digital revolution as inherently technical, a change in the means of production, i.e. the tools that are used to produce content and the form of the end product. However, the transformation of transactions and transaction costs is just as important. The digitization of content, which has captured so much attention in the intellectual property wars because of the ability to copy perfectly and infinitely, is not all that matters.

At the same time as this the new technology has changed the relationship between artists and recording companies, it weakens the star system because "there is a greater probability of discovering other high quality music items by lesser known artists with the new technology."[63]

The ultimate cost savings in marketing and distribution come from both the supply side and the demand side. On the demand side, the ability to sample "is an information-pull technology" and "a substitute to marketing and promotion, an information-push technology."[64] As the cost structure of the industry changes through the adoption of digital technologies, performance improves since "variable costs relative to fixed costs are more important for music downloads than for CDs. This suggests that acts with a smaller audience can succeed in the digital music market. As a consequence, we could observe more music diversity and less skewed distribution of sales among artists."[65]

In fact, we do observe this pattern. The payoff for artists and society is increased diversity. Although the examples above are geared more toward the starving artists, those who may never get onto the charts, the impact has been documented even at the top of the charts.

> . . . We find strong evidence that over the last decade, the number of unique artists and albums that have appeared on the Billboard Top 200 album charts is statistically related to the number of Internet

62. Plambeck, *supra* note 60, at B1.

63. Gopal et al., *supra* note 24, at 1530.

64. Martin Peitz & Partick Waelbroeck, *File-Sharing, Sampling, and Music Distribution* 5 (Int'l Univ. in Germany, Sch. of Bus. Admin., Working Paper 26/2004, 2004).

65. MARTIN PEITZ & PATRICK WAELBROECK, AN ECONOMIST'S GUIDE TO DIGITAL MUSIC 396 (2005).

> users. The implication is that with lowering of information sampling costs, consumers become aware of more new albums they like, leading to more artists and albums being ranked on the charts.
>
> . . . .
>
> . . . The implication is that as sampling becomes less expensive, the superstar effect is eroded overall, and more users purchase music items based on their actual, not perceived, valuations.[66]

The effects of the change in the business model driven by digital distribution have become clear.

> [T]he multiple ways to make money provide hope to a struggling industry and are also changing the kind of music that gets made and promoted. Album sales are often driven by older listeners who typically favor country and soft-rock artists like Taylor Swift and Susan Boyle.
>
> Pop and hip-hop artists like Taio Cruz and Rihanna are sometimes underrepresented on the album chart, as younger fans in particular have moved to buying singles and streaming music online.[67]

On the date of submission of this article (August 30, 2010), analysis of the Top 50 in the charts supports this conclusion. There were forty-eight artists represented among the Top 50 albums and another twenty-seven without a Top 50 album had a Top 50 single.[68] An additional seven artists, who had neither a Top 50 album nor a Top 50 single, were listed as a being in the Top 50 when other digital distribution is taken into account (Ultimate Chart).[69] Of the thirty-four artists who did not have a "hit" album, only one had more than one single in the Top 50.[70] In fact, only six of the eighty-two artists in these top 50 lists had more than one single in the Top 50.[71] Consumers are clearly able to meet their music needs in a more efficient manner and save a great deal of money.

An analysis of artists' revenue streams from Norway, shown in Exhibit III-7, finds that total artist income has increased substantially in spite of declining revenues from record sales because the other sources of

66. Gopal et al., *supra* note 24, at 1526-1528.

67. Plambeck, *supra* note 60.

68. *See The Billboard 200*, BILLBOARD, Aug. 28, 2010, at 34; *Hot 100*, BILLBOARD, Aug. 28, 2010, at 38.

69. *See id.*; *see also* THE ULTIMATE CHART, http://www.ultimatechart.com (last visited Dec. 8, 2010).

70. *The Billboard 200*, *supra* note 68; *Hot 100*, supra note 68.

71. *Id.*

income have increased even more rapidly.

3. The Welfare Economics of the New Industry

This transformation is perfectly consistent with economic theory and can be explained in the classic terms of welfare economics. Figure II-8 shows the welfare economics. It includes both the supply and demand side shifts (falling costs, rising demand) and a shift from oligopoly pricing to competitive pricing. The recording industry had very high margins due to the exercise of market power over product and price in the distribution oligopoly. The digital revolution changed the picture: (1) there was a dramatic shift in the cost curve; (2) there was a shift in the demand curve; and (3) the market power of the industry was undermined by consumer sovereignty, shifting pricing power from producers to consumers.

Referring to Figure II-8, record labels were fat and happy living at point A, fixing prices and bundling songs onto albums, experiencing supra-normal profits. In the digital economy, record labels would like to live at point B because rents would increase if they could capture a disproportionate share of the cost savings. The technology allows consumers to engage in some self-help and forces record labels to build new business models, located at point C. Rents are thin here, but the industry can achieve a stable equilibrium with normal profits. Most importantly, content producers can survive. Some analysts make the mistake of suggesting that the industry can survive at point D, but it cannot. The costs at point C are real and they must be recovered. Neither the fat and happy copyright-holder world of oligopoly rents (point B), nor Internet fairy tale world of "free everything" (point D) could survive long in a dynamic capitalist economy. In the former, entry will compete the ill-gotten gains away, returning them to consumers; in the latter, exit will cause the rents, and the products, to disappear.

In conclusion, based on a series of assumptions that this paper argues were erroneous, the industry put forward vastly overblown claims of piracy and revenue loss. At the end of the 1990s, the industry assumed that the bubble of sales created by the previous change in formats would continue and it could preserve its anticompetitive pricing structure in spite of the dramatic reduction in costs made possible by digital production and distribution. It also hoped its policy of forcing consumers to buy bundles of songs rather than singles could be maintained despite the dramatically altered economics of music distribution in favor of digital singles. Both of these assumptions were incorrect. It was not piracy that delivered benefits to consumers, it was economic efficiency.

C. Extensions of Digital Economics to Other Sectors

1. Newspapers

These same powerful economic forces have been visible in other sectors. The audience-creating aspect of digital disintermediation is most evident in the newspaper sector. As shown in Figure II-9, the primary source of lost revenue in the past decade was in classified advertising, accounting for about 60 percent of the loss. Classified advertising is an appendage to the newspaper—usually contained in a separate section—and advertisers pay to be there because they think there will be an audience. Once the Internet became ubiquitous, specialized classified service providers (e.g. Craigslist), employment lists (Monster.com), and electronic two-sided markets providers (e.g. E-bay) became more attractive. The ability to target advertising is also important. The success of local cable and local weekly newspaper advertising has probably accounted for a part of the revenue loss in the retail category because they allow local advertisers to target adds better than dailies that serve a very broad geographic area. Since these losses are based on efficiency and competition, there is no reason to believe that they will ever be restored, nor is there any reason to support an economic proposition that policies should be implemented to "save" the commercial mass media enterprises. Digital distribution is not succeeding because it is stealing the content of the commercial mass media; it is succeeding because it is a much more efficient mechanism for aggregating audiences and distributing information. Because it is so efficient, the future media will not support the massive commercial enterprises that came to dominate mass media in the 20th century.

2. Book publishing

The economic impact of digital disintermediation in the distribution of books parallels the impact on music and newspapers, characterized by fierce battles over capturing rents made possible by more efficient production and distribution. As shown in Exhibit III-10, the cost of production and distribution of books declined from about $17 per book to less than $4 per book. Publishers defend high prices for digital books in the name of preserving bookstores,[72] but there is a widespread

72. Another reason publishers want to avoid lower e-book prices is that print booksellers like Barnes & Noble, Borders and independents across the country would be unable to compete. Consumers, however, are buying electronic readers and becoming comfortable with reading digitally. If e-books are priced much lower than the print editions, no one but the aficionados and collectors will want to buy paper books. Motoko Rich, *Math of Publishing Meets the E-Book,* N.Y. TIMES, Mar. 1, 2010, at B1 ("If you want bookstores to stay alive, then

belief that they are also seeking to avoid downward pressure on the pricing of physical books.[73]

The empowerment of content creators is evident in book publishing space, as it was in the music space. The dramatic improvement in the discovery and information function of the market expands sales. Examples from book publishing, where digitization of distribution is just beginning, highlight the importance of the transformation of the relationship between the creator and the audience.

Readings have long been a way for authors to reach audiences. This is part of the discovery function. Podcasts change the arithmetic.

> Horror writer Scott Sigler, one of the pioneers in this area, began regularly posting readings of his first book in March 2005. "EarthCore," broken up into 45-minute chunks that he posted on a weekly basis, won an audience of 10,000 listeners. His second book, "Ancestor," did even better, scoring 30,000 subscribers. . . .
>
> This month, Sigler's fourth book debuted in a hardcover release for the first time, from Crown Publishing Group, an imprint of Random House. Crown has printed an initial run of 100,000 copies . . . . That's a high figure for the book industry, where mostly unknown authors usually get an initial print run of only a few thousand. [74]

Sigler is an unsigned artist who has used the new distribution medium to break into the system. The new medium not only makes it possible to reach fans, but it involves elements of viral communications. "Sigler's editors say the company has been impressed that Sigler fans have requested promotional materials about the book to try to spread the word about the new hardcover edition[75]

Another author, J.C. Hutchins, utilizes "a 'minister of propaganda' [on his website to] routinely [send] his readers on missions that vary from burning CDs and passing them along to printing out promotional postcards and slipping them onto shelves at the local bookstore."[76] Direct

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you want to slow down this movement to e-books," said Mike Shatzkin, chief executive of the Idea Logical Company, a consultant to publishers. "The simplest way to slow down e-books is not to make them too cheap.").

73. The argument involves shifting cost recovery between hardbacks and paperback. *Id.* ("Moreover, in the current print model, publishers can recoup many of their costs, and start to make higher profits, on paperback editions. If publishers start a new e-book's life at a price similar to that of a paperback book, and reduce the price later, it may be more difficult to cover costs and support new authors.").

74. Mike Musgrove, *Breakthrough of the Podcast Authors*, WASH. POST, Apr. 13, 2008, at F01.

75. *Id.*

76. *Id.*

involvement and collaboration are also possible. "To further build reader interest and loyalty, Hutchins recently opened up his fictional world to fans and invited them to add their own stories."[77]

Giving content away for free, the center of the recording industry's concern, is one of the many strategies that artists can use to stimulate future sales.

> Tor Teen books is publishing the dead-tree version, and it will also be available . . . as a free download in formats that will be easy to read on, say, the screen of a PDA. As with podcasts, the idea is to win over potential converts with free content in the hopes that readers or listeners buy something down the road.[78]

3. Video

Digital disintermediation is in its early stages in the video space, but, given its impact in the music and newspaper product spaces, it has already attracted a great deal of attention. Wall Street analysts who have been examining the growing competition between Internet video and traditional video distribution[79] frequently begin by discussing the impact of digital distribution on the music labels and the determination of video content producers to avoid that fate.[80] Or, as Comcast puts it, they need to make "sure that we get ahead of the steamroller that is the Internet."[81] The time frame in which this steamroller is projected to arrive is relatively short and the extent of the potential competition is pervasive.[82]

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77. *Id.*

78. *Id.*

79. PIPER JAFFRAY, INTERNET VIDEO: FIELD OF DREAMS OR NIGHTMARE ON ELM STREET? 5 (2009).

80. For example, the opening section of the Piper Jaffray analysis is entitled "Music v. Video: Why These Markets are Traveling Down Different Paths." Similarly, the title page of Michael Nathanson's book *Web Video: Friend or Foe…And to Whom?* starts with an observation about the difference between music and video and links that difference to the proactive behavior of Comcast. MICHAEL NATHANSON ET AL., WEB VIDEO: FRIEND OR FOE...AND TO WHOM? (Bernstein Research 2009); *see also* Tim Arango, *Cable TV's Big Worry: Taming the Web*, N.Y. TIMES, June 24, 2009, at B1 [hereinafter *Big Worry*] ("What is at stake is perhaps the last remaining pillar of the old media business that has not been severely affected by the Internet: cable television. Aware of how print, music and broadcast television have suffered severe business erosion, the chief executives of the major media conglomerates . . . have made protecting cable TV from the ravages of the Internet perhaps their top priority.").

81. Jeff Baumgartner, *Comcast Nears 'TV Everywhere' Launch*, LIGHT READING (Sept. 9, 2009) http://www.lightreading.com/document.asp?doc_id=181548&site=lr_cable.

82. UBS INVESTMENT RESEARCH, Q-SERIES: GLOBAL MEDIA THEME - CAN PAY TV BENEFIT FROM ONLINE VIDEO? 9 (2009); NBC recently stated that "[t]he Internet as a distributor of high-quality video programming has reached the tipping point . . . ." Reply Comments of NBC Universal, Inc., in Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming, MB Dkt. No. 07-269, 2 (August 28, 2009),

The music labels have suffered a major reduction in their revenues and margins as a result of digital distribution, and Wall Street analysts are concerned with the ability of the video content producers to maintain their rate of profit. This paramount Wall Street concern is only part of a proper economic analysis. Rather, the following key elements (which are given short shrift in these analyses) must also be considered:

- **Consumer Welfare**: In the Wall Street analyses, the question of how consumers have fared is, at best, given cursory treatment. While the convenience of digital distribution is frequently noted, the direct impact on the consumer pocketbook, consumer surplus in economic terms, receives little attention.
- **Super-Profit Protectionism**: The possibility that the profit margins the music labels were trying to defend in their war against digital distribution were excessive never enters the analysis.
- **Efficiency Gains to Industry**: The efficiency gains in the industry also do not receive the attention they deserve.

Since it is the job of Wall Street analysts to advise investors about the prospect for (preferably supra-normal) profits, these blind spots in their analysis are understandable, but policymakers must have a broader and more complete view. The consumer and public interest impact of technological change, market structure, and alternative business models must be taken into account by policymakers. The investor view must be balanced against the consumer view to ensure a market structure that is efficient, stable and equitable.

4. Avoiding the Nightmare on Elm Street

The juxtaposition of the music and video industry approaches to digital distribution provides the launching point for one recent study entitled *Internet Video: Field of Dreams or Nightmare on Elm Street?*. Needless to say, the music sector is seen as the nightmare on Elm Street. The music industry's fate is depicted as follows:[83] Faced with a consumer rebellion, the music labels tried to lock down content and slow alternative distribution. Finally realizing that they needed a digital distribution model, they ended up the captives of a high tech company

available at http://fjallfoss.fcc.gov/ecfs/comment/view?id=6015188856.

83. JAFFRAY, *supra* note 79, at 4; *see also* Ronald Grover et al., *Revenge of the Cable Guys*, BUSINESSWEEK, Mar. 11, 2010, at 38 ("Jeff Bewkes and Brian Roberts, the CEOs of Time Warner and Comcast . . . took a lesson from the music labels, which looked up one day to find that Steve Jobs and Apple had taken control of their inventory.").

(Apple), whose primary interest was in selling hardware and other peripherals. Pricing content to promote penetration, a strategy well-known and effective in the Internet space, meant usage charges were kept low and margins for the record labels were squeezed. An industry that was focused on high margins driven by the "value" of the product had difficulty viewing the world through a low margin, penetration-promoting lens.

The analysts' buzzwords for what must be avoided by the incumbents in the video industry structure are *arbitrage*, *cannibalization*, and *disintermediation*.[84] As used in this context, each of the terms indicates a shifting in the flow of commerce through a distribution channel that yields high profits to the incumbent to a channel that yields a lower rate of profit or the removal of the flow of commerce from the incumbent's channel entirely. Each player with leverage in the current supply chain is at risk of having its control over distribution diminished. This is particularly true for the two sectors involved in the Comcast-NBC Universal merger: video content production and multichannel video distribution. For the content owners, the risk is "leakage" of their content into channels that command lower revenues.[85] For distributors, it is the potential loss of subscribers, who "cut the cord," reduce their payments for premium content, or resist price increases because they have alternative distributors available to them.[86]

Another motivating factor in reacting to the potential for digital distribution is the potential for piracy. Wall Street analysts are divided on

84. NATHANSON ET AL., *supra* note 80, at 15; UBS INVESTMENT RESEARCH, *supra* note 82, at 3, 10; Dawn C. Chmielewski & Meg James, *Hulu's Tug of War with TV*, L.A. TIMES, May 11, 2009, at B1 ("'We have to be mindful of the fact that we have a good business that works for all the players,' said Andrew Heller, domestic distribution president for Turner Broadcasting. 'We have to find ways to advance the business rather than cannibalize it.'"); Deborah Yao, *Cable Companies Want a Way to Win with Online TV*, USA TODAY (Feb. 24, 2009, 5:15 PM) http://www.usatoday.com/tech/news/2009-02-24-cable-companies_N.htm ("'There's pressure on all of us,' [Jeff Gaspin, President of NBC's Universal Television Group] said, referring to TV networks. 'We get paid quite a bit of money from cable operators. . . . It's important we find ways to do business that protects that business model.'").

85. UBS INVESTMENT RESEARCH, *supra* note 82, at 15; *Big Worry*, *supra* note 80 ("Unlike broadcast television, which relies solely on advertising, cable networks have another revenue stream: fees paid by cable operator. . . . 'That stream is so important to every entertainment company that everybody is looking at that and saying, if we are not careful we could start to harm that model,'[President of Comcast Cable, Stephen P.] Burke said.").

86. UBS INVESTMENT RESEARCH, *supra* note 82, at 4; Chmielewski & James, *supra* note 85 ("'The appetite for full-length TV shows online was larger than anyone thought or expected,' said Bobby Tulsiani, Forrester Research media analyst. 'And now people are starting to wonder, do we even need the cable connections?'"); Deborah Yao, *Cable Companies See Customers Cutting Back: 'The Beginning Of Cord Cutting,'* HUFF. POST (Feb. 8, 2009, 2:48 PM EST), http://www.huffingtonpost.com/2009/02/09/cable-companies-see-custo_n_165138.html ("[Time Warner Cable CEO Glenn Britt stated in 2009], 'We are starting to see the beginning of cord cutting.'").

this question. Some see avoiding piracy of content as a primary motivator for developing business models that allow consumers convenient access to content.[87] Others think the piracy concern is overblown.[88]

When Wall Street analysts are contemplating the array of concerns for the participants in the video product space, they see diversity among the players in the traditional Multichannel Video Programming Distributor ("MVPD") product space: content firms whose interests are defined by primarily ad-supported (over-the-air) networks versus content firms whose interests are primarily defined by fee supported (cable) networks,[89] incumbent cable operators versus new entrants,[90] and cable MSO/broadband ISPs versus content companies,[91] as well as several other sets of players who have small roles in the traditional MVPD market.[92] The different attitudes toward Internet TV among the various players, and the likely longer-term strategies, are evident in the availability of content online:

> Complete episodes of about 90% of prime-time network television shows and roughly 20% of cable shows are now available online . . . .
>
> . . . .

87. JAFFRAY, *supra* note 79, at 12; Chmielewski & James, *supra* note 84 ("Hulu was launched in March 2008 as a way of keeping TV programming safely in the hands of its creators and distributors. And by making it free, it could short-circuit piracy.").

88. NATHANSON ET AL., *supra* note 80, at 12.

89. NATHANSON ET AL., *supra* note 80, at 9-10; *Big Worry*, *supra* note 80 ("Unlike broadcast television, which relies solely on advertising, cable networks have another revenue stream: fees paid by cable operators.").

90. UBS INVESTMENT RESEARCH, *supra* note 82, at 15; George Szalai, *Opinion: Online Video's Impact Remains Unclear*, ADWEEK, July 3, 2009, *available at* http://www.adweek.com/aw/content_display/news/media/e3if52b9a5b28d70b335ffe8f533c42b814 ("'This is a way to stem concern about cable infrastructure being bypassed by free online viewing,' Collins Stewart analyst Thomas Eagan says."); Grover et. al, *supra* note 83 ("The new attack from Silicon Valley was the most serious yet, because it threatened to permanently cut the coaxial connecting the cable companies and their subscribers. 'We wake up every day and there is some new competitor out there—a Roku or a Boxee,' says Melinda Witmer, Time Warner Cable's programming chief."); Daniel Roth, *Netflix Everywhere: Sorry Cable, You're History*, WIRED, Sept. 21, 2009, at 102("'Our goal is to have everyone cancel their cable subscription,' Roku's Wood says.").

91. UBS INVESTMENT RESEARCH, *supra* note 82, at 28; *Big Worry*, *supra* note 80 ("Last month, Comcast agreed to pay Disney a monthly fee to offer its Internet subscribers ESPN 360, the sports network's online channel. One analyst, Richard Greenfield of Pali Research, has called that deal 'a watershed event for content owners in a broadband world, albeit that event occurred with little to no fanfare.'"); s*ee also* Comments of the American Cable Association in A National Broadband Plan for Our Future, GN Dkt. No. 09-51, 5-6 (June 8, 2009) *available at* http://fjallfoss.fcc.gov/ecfs/comment/view?id=5515364588.

92. Most notably the technology sector and device vendors, where massive amounts of storage open up prospects for a new form of distribution of content. UBS INVESTMENT RESEARCH, *supra* note 82, at 10; JAFFRAY, *supra* note 79, at 24.

> . . . The online selection of live sports games is spotty as well. This season for example, the National Football League will make Sunday night games available live on the Net, but those amount to only 7% of all regular-season NFL match-ups. Cable and broadcast news shows typically aren't streamed live on the Internet, unless there's breaking news even like Hurricane Katrina.[93]

Each of the parties is likely to leverage its strategic assets to defend its current share of revenues and rents in video distribution, as well as try to capture part of the efficiency gains flowing from digital distribution. Accordingly, the compromise is to replicate the traditional relations in the new product space. Note the distinction between broadcasters, who are more likely to make content available than cable, with the exception of sports and news content, which are marquee must-have categories that provide leverage to attract audiences.

The potential efficiency gains from digital distribution deserve attention because a new technological approach to distribution has a powerful effect on a business in which distribution has been a substantial part of the cost. There are supply-side and demand-side gains.[94] Advertising can become more efficient.[95] Physical costs are reduced as redundancy of devices[96] is eliminated and economies of scale and scope combine with technological progress to dramatically lower costs.[97]

Music labels certainly had an economic interest in preventing the disintermediation that eroded their rents. They reacted slowly and lacked the market power to prevent it. In the video business, content owners and cable operators are reacting more quickly. Content producers can leverage their libraries and "must have" content in a sector that is highly concentrated,[98] a situation that is not unlike the one that existed in the

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93. Nick Wingfield, *Turn On, Tune Out, Click Here*, WALL ST. J., Oct. 3, 2008, at W1.

94. Various efficiency gains are mentioned primarily from the point of view of increasing profit. JAFFRAY, *supra* note 79, at 12, identifies two classical opportunities—expanding supply in the long-tail and increasing demand through greater convenience.

95. UBS INVESTMENT RESEARCH, *supra* note 82, at 10; *see, e.g.*, Mike Shields, *Servin' It Up MTVN, Quantcast to Laser-Target Web Video Ads*, Mediaweek, Feb. 15, 2010, at 6.

96. NATHANSON ET AL., *supra* note 80, at 17. Declining technology costs run the gamut from bandwidth and multicasting to caching and routers, optical systems and storage.

97. *Id.*; s*ee also* Saul Hansell, *The Cost of Downloading All Those Videos*, N.Y. TIMES (Apr. 20, 2009, 3:55 PM), http://bits.blogs.nytimes.com/2009/04/20/the-cost-of-downloading-all-those-videos ("The Comcast presentation said that the effect of this is that Docsis 3 will reduce the cost of the C.M.T.S. hardware, which had been about $20 per home passed, by 70 percent, for customers at current speeds. And it will allow 100-Mbps service at a lower hardware cost than the company had been paying for its then current 6-Mbps service.").

98. JAFFRAY, *supra* note 79, at 10, 31; NATHANSON ET AL., *supra* note 80, at 12; *see also* Jason Kilar, *Doing Hard Things*, HULU BLOG (Feb. 18, 2009), http://blog.hulu.com/2009/02/18/doing-hard-things; Jim O'Neill, *Hillcrest Confirms Hulu Blocking Kylo Web TV Browser From Its Online Video Content,* FIERCE ONLINE VIDEO, Mar. 22, 2010, http://www.fierceonlinevideo.com/story/hillcrest-confirms-hulu-barring-kylo-web-

music sector in the late 1990s. However, the real difference is in the market power of the cable operators, because these entities are also the dominant broadband Internet access providers. This is the fundamental difference between the music and video industries. In the latter, the owners of the dominant distribution network have a direct interest in preventing the disintermediation and have powerful tools to prevent it.

Analysts expect cable operators to leverage their market power in other ways.[99] Cable operators can capture a significant part of the efficiency gains that make larger rents available by increasing prices for Internet access and reducing the opportunity for Internet TV to undermine traditional MVPD market power.[100] They will use tools such as usage based pricing,[101] tying traditional video to Internet video,[102] and locking down content.[103]

Estimates of how fast the competitive threat will grow vary from a few years to more than a decade,[104] as do estimates of the magnitude of the threat, which reach as high as one in eight subscribers cutting the cord within a year.[105] However, there is unanimity on one proposition:

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tv-browser-online-video-content/2010-03-22.

99. NATHANSON ET AL., *supra* note 80, at 15 ("Cable operators won't just stand by and watch – they'll take actions that affect this evolution."); Andrew Hampp, *MSOs Fight to Keep TV on the TV, Not the Net*, AD AGE (June 16, 2008), http://adage.com/mediaworks/article?article_id=127772 ("Alexander Dudley, a spokesperson for Time Warner Cable, told Ad Age the company is prepared to go as far as withholding some of the subscriber revenue upon which networks like Comedy Central have built the bulk of their business model.").

100. Ironically, Apple, which is the central player in digital disintermediation in the music space, sees the stranglehold on the set-top box as a barrier to entry. Will Richmond, VIDEO NUZE (June 7, 2010, 9:58 AM ET), http://videonuze.com/blogs/?2010-06-07/Why-Apple-Still-Doesn-t-Have-a-TV-Strategy/&id=2591.

101. *See* NATHANSON ET AL., *supra* note 80, at 15 ("Wachovia Analysts Marci Ryvicker stated, 'We view usage-based billing, or bandwidth consumption caps, as a significant impediment to not only ZillionTV but also to true over-the-top video providers . . . .'"); s*ee also Add Another Voice to the Chorus of Those Saying Online Video's...*, COMM.. DAILY, Apr. 15, 2009, at CABLE section; *Firestorm Over Time Warner Caps*, DSL PRIME, Jan. 21, 2008 ("I believe Time Warner's interest in bandwidth caps has little to do with its own costs and a lot to do with the emergence of movie downloads and streaming television programs over the Internet. The smart people at Time Warner are scared of people watching TV directly over the Internet.").

102. NATHANSON ET AL., *supra* note 80, at 15; s*ee also* Grover et al., *supra* note 83, at 38; Szalai, *supra* note 90 ("The lack of focus on such offers proves that TV Everywhere is mainly defensive for now. 'This is a way to stem concern about cable infrastructure being bypassed by free online viewing,' Collins Stewart analyst Thomas Eagan says.").

103. NATHANSON ET AL., *supra* note 80, at 12; *see also* Hampp, *supra* note 99; Chmielewski & James, *supra* note 84.

104. *Compare* JAFFRAY, *supra* note 79, at 4, *with* Richard Morgan, *Why Hulu Matters*, THE DEAL MAG., Dec. 14, 2009, at 40.

105. *Compare* Press Release, Yankee Group, Yankee Group Says 1 in 8 Consumers Will Ax Their Coax This Year (Apr. 27, 2010) (http://www.yankeegroup.com/about_us/press_releases/2010-04-27.html), *with* CONVERGENCE CONSULTING GROUP, THE BATTLE FOR THE CANADIAN COUCH

cable operators will actively resist and seek to undermine that competition.

> Of course, if they didn't create obstacles to this sort of disintermediation, cablers wouldn't be cablers. Some easy ways to forestall IP video's ascendancy include charging consumers for their Hulu use and increasing the number of commercials embedded in each Hulu episode. Only by taking control of NBCU can Comcast influence such decisions. Comcast's embracing "TV Everywhere," which allows paying subscribers to receive IP video as well as cable video, can be seen as another means to impede the same inexorable end. So, too, is the concept of usage-based pricing—the objective of which would be to price broadband consumption for downloading IP video in ways that make both the cable company and its customers indifferent to disintermediation.[106]

The Wall Street analysts identify the combination of the Comcast-NBC Universal merger and Comcast's Fancast Xfinity-branded "TV Everywhere" initiative as perfect examples of the key strategies in action.[107] Vertical integration becomes pivotal to block the effects of digital disintermediation, and the emergence of a large firm straddling the production and distribution stages is a critical step in achieving the necessary spirit of collaboration.

With Comcast and Time-Warner now moving forward with video

POTATO: BUNDLING, TELEVISION, INTERNET, TELEPHONE, WIRELESS 8-9 (2010) (which puts the number at 1 in 30 by year-end 2011); s*ee also* Mike Robuck, *Report: OTT eating into video market share pie*, CED MAGAZINE (Oct. 9, 2010), http://www.cedmagazine.com/News-OTT-video-market-share-100909.aspx ("SNL Kagan's latest report forecasts that over-the-top providers, such as Hulu, will account for 7.1 million homes by 2013, and for more than twice that number in 10 years."); Tim Arango, *Cable TV's Big Goal: Web Profits*, N.Y. TIMES, June 24, 2009, at B1 (For his part, Comcast's Stephen Burke, President of Comcast cable, states "We don't think that it's a problem now, but we do feel a sense of urgency[.]").

106. Morgan, *supra* note 104.

107. *See* NATHANSON ET AL., *supra* note 80, at 9; Yinka Adegoke, *Web TV Could Come With a Price Tag After Comcast-NBC*, REUTERS (Oct. 4, 2009, 9:48 AM EDT), http://www.reuters.com/article/idUSTRE5942UI20091005 ("'We suspect Comcast believes it needs content to protect its landline distribution platform,' Richard Greenfield, analyst at Pali Research, wrote in a note to investors on Friday. 'It wants to mitigate the risk of becoming that scary 'dumb' pipe'. . . . Hulu was started by NBC and Fox so they could compete with Comcast. So this is a defensive move to some extent by Comcast,' said Kaufman Bros. analyst Todd Mitchell. 'Hulu will just become another choice of Comcast's pay-TV buffet.'"); *see also* Comments of Netflix, Inc, in Preserving the Open Internet, Broadband Industry Practices, GN Dkt. No. 09-191, WC Dkt. No. 07-52 (Jan 14, 2010), *available at* https://prodnet.www.neca.org/publicationsdocs/wwpdf/0114netflix.pdf ("[T]he recent announcement of the proposed merger of Comcast and NBC Universal serves to exacerbate the growing concern that MVPDs will use their control over programming networks to stifle competition, including the growing competition from online video providers like Netflix.").

> paywalls, are the cable companies doing what Hollywood and the music industry couldn't do? . . . That reality is coming sooner than you think.
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> . . . .
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> . . . This isn't the music business, apparently . . . there's still life in old dinosaur methods of content delivery when it comes to movies and teevee [sic] shows, and the conglomerates and CEO's that control them aren't too keen on giving up their domination of content delivery services just yet.
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> . . . .
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> . . . It's simply a browser bound way of locking you out of live streamed or stored content based on a verification ID . . . namely your cable account's user name and password.
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> . . . .
>
> . . . [I]t's almost impossible to stop the Comcast juggernaut from taking over NBC and removing content from Hulu and other currently free broadband streaming services or aggregators.
>
> . . . .
>
> . . . TV Everywhere, which has been tested for over a year, can be seen as simply a way for cable companies to continue with the old model of doing business.[108]

The most direct and obvious way to prevent disintermediation is to maintain the flow of content in channels that can be controlled, which is the obvious intent of TV Everywhere: "While a lot is happening on the convergence front (e.g. Google TV, Roku, etc.), with the advent of TV Everywhere, the likelihood that cable programs will not leak out onto the open Internet is lower than ever."[109]

III. POLITICAL ACTION AND THE OBAMA CAMPAIGN ORGANIZATION

In a sense, politics is about the creation of a unique, non-

108. Christian Hokenson, *TV Everywhere Leave VOD Nowhere*, HD REPORT (May 18, 2010), http://www.hd-report.com/2010/05/18/tveverywhere-vod/#more-5941.

109. Will Richmond, VIDEO NUZE (May 27, 2010, 10:42 AM ET), http://www.videonuze.com/blogs/?2010-05-27/VideoNuze-Report-Podcast-63-Yankee-Group-Cord-Cutting-Research-Download-Available/&id=2581.

commercial audience. This section examines the Obama campaign as an example of structured viral communications that harnessed the forces of digital disintermediation for political purposes.

A political party in an election campaign is a quintessential task oriented organization. Communications are central both to its internal organizational coherence and its external goal. The management and manipulation of information are primary tools of success with the ultimate goal of creating an active audience—engaging members and mobilizing them for the electoral effort. The sporadic nature of elections may have masked the impact, but the Obama campaign of 2008 makes it clear that the use of the Internet will transform every aspect of the electoral process.

The Internet and traditional political institutions should be seen as two intersecting planes of action moving down a central path. The ability to conduct political activity is suddenly enhanced (see Figure IV- 1). There are two thrusts to this new dynamic of organization. On one path, Web tools are used to make physical space activities work better. On the other path, technology is used to enrich large-scale cyberspace activities. Given the nature of the environment and the key characteristic for success—openness and viral communications—the lines between internal and external begin to blur.

A. The Magnitude of Change

The magnitude of the organization that was achieved by the Obama campaign, with its combination of both cyberspace and physical space organizing, is staggering compared to prior presidential campaigns. Keep in mind that Obama got 68 million votes (see Figure III-2). Obama collected over 13 million e-mail addresses and attracted nearly 5 million friends on social websites (two million profiles, 1.5 million volunteers and one million texters).[110] At the core of the organization were 2,500 paid staff and 150,000 activists who attended Camp Obama for training.[111] This huge number of contacts produced massive amounts of political action. By the end of the cycle, the Obama campaign raised something on the order of three quarters of a billion dollars from well over three million donors.[112] Online donors totaled 3 million and gave half a billion dollars.[113] There were over half a million Obama videos

110. MONTE LUTZ, THE SOCIAL PULPIT: BARACK OBAMA'S SOCIAL MEDIA TOOLKIT 5 (Edelman 2009); Jose Antionio Vargas, *Obama Raised Half a Billion Online*, WASHINGTONPOST.COM (Nov. 20, 2008, 8:00 PM ET) http://voices.washingtonpost.com/44/2008/11/obama-raised-half-a-billion-on.html.

111. LUTZ, *supra* note 110, at 12.

112. Vargas, *supra* note 110.

113. *Id.*

posted (most independent of the campaign) that were viewed over 100 million times.[114] There were 400,000 blogs and 35,000 self-formed groups that staged 200,000 events.[115]

> The magnitude of the transformation cannot be underestimated. The change in organization reflects a shift in the terrain of politics.
>
> The changes go beyond what Mr. Obama did and reflect a cultural shift in voters, producing an audience that is at once better informed, more skeptical and, from reading blogs, sometimes trafficking in rumors or suspect information. As a result, this new electorate tends to be more questioning of what it is told by campaigns and often uses the Web to do its own fact-checking.
>
> "You do focus groups and people say, 'I saw that ad and I went to this Web site to check it,' " said David Plouffe, the Obama campaign manager. "They are policing the campaigns."
>
> [Steve] Schmidt [John McCain's chief campaign strategist] said the speed and diversity of the news cycle had broken down the traditional way that voters received information and had given campaigns opportunities, and challenges, in trying to manage the news.
>
> "The news cycle is hyper accelerated and driven by new players on the landscape, like Politico and Huffington Post, which cause competition for organizations like The A.P. where there is a high premium on being first," he said. "This hyper accelerates a cable-news cycle driven to conflict and drama and trivia."[116]

B. The Internal Structure of the Structured Viral Organization Model

The exploitation of the opportunity was not accidental. In the political organization, structured viral communication should be conceptualized as a two-way flow of information and resources between the organization and its members (see Figure III-3). The organization must array roles and functions to meet member needs, giving them reason to commit time, effort and resources to the organization. It can

114. *Id.*

115. *Id.*

116. Adam Nagourney, *The '08 Campaign: Sea Change for Politics as We Know* It, N.Y. TIMES, Nov. 4, 2008, at A1.

then use the financial and human resources made available to it to accomplish shared goals.

1. Recruitment and Training

If this were not a goal-oriented, institution-building effort, it would be okay to let the virus spread wherever and whenever it pleased. But, if this is to be an effective political organization, the energy must also be available at specific times for specific purposes. A light hand of hierarchic direction is needed amid the chaos of viral democracy. The key is to build norms that facilitate self-directed activity. Therefore, structure is still vital.

> An 80-plus page training manual provided to campaign field organizers illustrates the organizational side of the campaign. Members of leadership teams are assigned specific roles, such as team coordinator, data coordinator, volunteer coordinator, voter-registration and voter-contact coordinator, and house-meeting coordinator. Each of these positions has a clearly defined role outlined in bullet points. Those teams of people and their cadres of volunteers are ultimately assigned to get out the vote in specific geographic regions.
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> . . . .
>
> . . . So the campaign swelled field operations to 19,000 "neighborhood teams" as of late October, focused on 1,400 neighborhoods across the state, according to a recent report from the *St. Petersburg Times*. The teams are directed by about 500 paid campaign field organizers, and are replicated nationally. In all, the Obama campaign estimates that 1.5 million volunteers are helping it to get out the vote in the battleground states.[117]

A key challenge to building a model for engagement in political activity based primarily on the Internet is to provide a rhetoric and structure that assures potential members that they will be able to constructively promote their ideas and target their energy in an organized, reliable environment that shares reputational similarities to the world outside of cyberspace.

> The model also uses personal storytelling during workshops as a way to motivate peers and potential recruits to action.

117. Sarah Lai Stirland, *Obama's Secret Weapons: Internet, Databases and Psychology*, WIRED (Oct. 29, 2008, 6:01 PM) http://www.wired.com/threatlevel/2008/10/obamas-secret-w/.

. . . .

. . . Obama organizers, and some volunteers, enter the campaign machine through weekend training sessions called "Camp Obama."

. . . .

. . . The sessions vary in size from groups of 40 to more than 300, held variously at the campaign's Chicago headquarters, in rented office spaces, union halls, churches or on college campuses. In addition to leadership and motivation training, the camp features storytelling sessions, where the volunteers are broken up into small teams organized by congressional district. Each member of these groups is asked to tell personal stories in two minutes, in the same format Obama used in his 2004 speech at the Democratic National Convention.

"Ultimately, your story should move people to specific action by painting a detailed picture of how things might be different if we act, giving us hope that if we act now we can make real that different future," explains the training manual.

The stories are an exercise in relationship building, says [Marshall] Ganz [a public policy lecturer at Harvard who designed the field-organizer and volunteer training system].

"What we've been doing is trying to teach people to do what Obama does during his speeches — to tell their own stories to motivate others," he says. "You're building this sense of commitment to both the values and people, but you're structuring it purposefully to achieve goals like, 'In this district, we need 2,000 votes.'"

The Obama campaign first experimented with the Ganz-Wageman system during the primaries, trying it out in Iowa and South Carolina. It won in both states, while in New Hampshire, where it ran a more-traditional marketing campaign, Obama lost. The campaign began phasing in the system nationwide in June. More than 23,000 people have participated in at least eight or more hours of leadership training provided by Camp Obama, according to Ganz.[118]

118. *Id.*

2. Motivation and Monitoring

Diversifying the nature of the results and defining early on what members will experience in terms of both information and collaboration promotes initial commitment. Updating goals based on the developing interests of members and the changing political climate around them, while also taking feedback to heart about what members want to do, engenders continued commitment.

> But the campaign also seems to recognize that some volunteers won't cotton to a top-down system, and its web tools accommodate independent efforts. [Florida resident Jeanette] Scanlon started her work for Obama with the South Tampa team, but felt the campaign wasn't sending enough volunteers to canvas her hometown Plant City, a working-class suburb that voted for Bush in the last two presidential elections. Obama's organizers insisted that they needed to focus their efforts on more densely populated surrounding areas.
>
> . . . .
>
> . . . So Scanlon took matters in her own hands by tapping into the campaign's online Neighbor-to-Neighbor tool on myBo. In two days last September, she knocked on 50 doors to sniff out support for Obama, entering her neighbors' responses into the campaign's databases through myBo.[119]

This means members must experience frequent results, no matter what form or medium they are delivered in. "MoveOn has figured out how to give its members continuous opportunities to take small, simple steps and see the results in a matter of days, if not hours. Help pay for this ad to go in that newspaper. Go to this vigil and bring a candle."[120]

The main structural objective for satisfying and inspiring members is to ensure "differentiated levels of entry," providing the ability to "participate at various levels in conversations and to contribute to the community's knowledge repository" in myriad ways, whether it be *passive participation* (newsletters, interview transcripts, items that they mainly receive) or *active participation* (discussion group notification, chat announcements, physical-world opportunities.[121]

The empirical evidence on group formation and persistence on the Internet shows that networks become groups through communications

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119. *Id.*

120. MICHAEL CORNFIELD, POLITICS MOVES ONLINE: CAMPAIGNING AND THE INTERNET 79 (2004).

121. HUBERT SAINT-ONGE & DEBRA WALLACE, LEVERAGING COMMUNITIES OF PRACTICE FOR STRATEGIC ADVANTAGE 88 (2003).

processes that also support the political activities of the organizations.

> Online social network sites – socnets, community blogs to YouTube – are changing how the members of this class get their news, whom they trust to provide it and how they act on it. Whatever the source, they comfortably and routinely comment on the news, reproduce it, then forward it to relatives, friends, co-workers and, yes, strangers.
>
> The relationship between the candidates and their supporters has shifted, too. Supporters see themselves less as gents of campaigns but as independent of them.
>
> . . . .
>
> . . . What's surprised [Katie Stoynoff, founder of online group Akron for Obama] most about all the blogging and networking, she says, was her ability to reach out to people whom she did not know, especially Clinton supporters who were reluctant to back Obama.[122]

Members and participants become more deeply engaged through collateral communications, which expand on the messages that are sent to stimulate specific actions. Insurgent media (blogging) has become a new form of collective action. Collaboration supports both the organization, qua organization, and the specific political activities. Collaboration is an interactive process in which values, norms and boundaries are defined through a fundamentally deliberative democratic process of communications among peers.

> "A campaign used to be the big gear trying to get you, the smaller gear, to turn around, to line up with their agenda and what they represent," [political blogger Chris] Myers says. "Now, through blogging, through only donations, whatever, the voter is now the big gear."
>
> . . . .
>
> . . . And with the Internet making it easier than ever for voters to fund a candidate, act as their own publishers and search for information (and misinformation), the Washington political establishment – candidates, strategists and journalists – has been forced to loosen its hold on setting the narrative of the campaign. For voters such as Myers and Stoynoff, this is a sign of how the electoral process has been democratized and individualized. It's neither

122. Jose Antonio Vargas, *Politics and Social Networks: Voters Make the Connection,* WASH. POST, Nov. 3, 2008, at C1.

McCain's nor Obama's campaign. It's their campaign.[123]

Thus, collaboration is fundamental in setting the structured viral model apart from past online endeavors and for priming potential members for confidence in their new information ecology. The "local" environment can be virtual most of the time, but it is beneficial as far as the bonding of members to the organization if it is also physical from time to time.

> Things heated up after the Democratic convention in August. Now, about three to four nights a week, she's doing something campaign-related, such as organizing phone banks at Panera Bread, where Obama supporters gather with their cell phones to call neighbors, and helping plan canvassing walks around summit County, where she grew up.
>
> . . . .
>
> . . . Four years ago, participating in a campaign online meant sending e-mail chains and planning e-mail campaigns. Now it can be much more, from live-blogging an event for others who can't be there to creating YouTube videos.
>
> This transformation is not controlled by the campaigns. Sure, McCain and Obama have their own socnets – McCainSpace and MyBarackObama – but that doesn't guarantee that supporters will sign up. You don't need permission – or any affiliation with the campaign – to get involved.[124]

Members customize their involvement by partaking in as much online and physical-world activity as they desire and suggest new discussion groups, physical-world opportunities, and points of interest/emphasis. Members build buzz and carry the hum of activity, informing friends, colleagues, and family.

> During a sweltering Friday evening rush hour in early October, Jeanette Scanlon spent two-and-a-half hours with 20 other people waving a homemade Barack Obama sign at the cars flowing through a busy intersection in Plant City, Florida.
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> . . . .

123. *Id.*
124. *Id.*

> . . . Scanlon is one of an estimated 230,000 volunteers who are powering Obama's get-out-the-vote campaign in the swing state of Florida. And while sign-waving is a decidedly low-tech appeal to voters' hearts and minds, make no mistake: The Obama campaign's technology is represented here. Scanlon organized the gathering — and 24 others since September — through Obama's social networking site, my.BarackObama.com. Similarly, she used the site's Neighbor-to-Neighbor tool in September to find registered voters in her own neighborhood, so she could canvass them for Obama. And this weekend, Scanlon and another 75 or so Plant City volunteers will be phoning thousands of Floridians to urge them to vote, using a sophisticated database provided by the Obama campaign to ensure they don't call McCain supporters by mistake.
>
> . . . .
>
> . . . Though she's volunteered on presidential campaigns before, it was the first time that she had ever made the effort to canvas for a presidential candidate by visiting neighbors' houses.[125]

An organization must use both technology and community to serve the needs of the members, a very different role from the typically self-centered campaign that sees its volunteers as serving *its* needs. Members must be able to grasp the information and opportunities they want, without tiring themselves out as a result of "drinking from the fire hose."[126] This drowning effect is the fiercest threat to real commitment and prolonged involvement in the community. Personal control over the online environment creates the ability to shape and reshape the production and digestion of the valuable human and social capital that the Internet Engagement Model provides.

The researchers discovered that the kind of volunteers that the Sierra

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125. Stirland, *supra* note 117.

> In early August, the group was called together again . . . by Kathryn Witzke. The University of South Carolina sophomore is taking a semester off to run five counties in the area as a field organizer.
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> Ms. Witzke asked each person to explain to the group why they were there. Coordinators were selected for different responsibilities, such as data management and voter registration. Relationships began to form.
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> . . . .
>
> . . . "The volunteers know their communities better than we do, so we just give them the basic structure and a schedule," says Chris Lewis, the 29-year-old field director for North Carolina. "But we can also see if something isn't working and make adjustments."

Christopher Rhoads, *Campaigns Try New Web Tactics In Battle to Tap Fresh Supporters*, WALL ST. J., Oct. 29, 2008, at A1.

126. SAINT-ONAGE & WALLACE, *supra* 121, at 45.

> Club attracted were "lone ranger" types who focused on accomplishing goals on their own, rather than effectively working with others with "shared purpose."
>
> The danger of this approach, Ganz says, is that individuals burn out easily. They try to do everything themselves rather than breaking the goals out into specific tasks that members of interdependent teams can accomplish in pieces. That's why relationships are so important, they found. Ganz and Wageman's model gets members of teams to find out more about one another's experiences, and draw on each member's expertise.[127]

These Interactions in a political campaign are a good example of what is known as weak ties.

> In mathematical sociology, **interpersonal ties** are defined as information-carrying connections between people. Interpersonal ties, generally, come in three varieties: *strong*, *weak*, or *absent*. Weak social ties, it is argued, are responsible for the majority of the embeddedness and structure of social networks in society as well as the transmission of information through these networks. Specifically, more novel information flows to individuals through weak rather than strong ties. Because our close friends tend to move in the same circles that we do, the information they receive overlaps considerably with what we already know. Acquaintances, by contrast, know people that we do not, and thus receive more novel information.[128]

"Sharing thoughts" on the Internet with large numbers of people is another form of weak tie noted in the discussion of file sharing. The interaction is richer than the simple swapping of files.

> Over at Swamp Bubbles, the community blog that Myers created in January 2007, liberal voices often challenge Myers, a conservative Republican. The site is a free for all, open to anyone who wants to blog about northwest Ohio politics.
>
> It's a mixed bunch, "with some people leaning to the right, some to the left, and some just plain nuts . . . ."
>
> . . . .

127. Stirland, *supra* note 117.

128. *Interpersonal Ties*, WIKIPEDIA, http://en.wikipedia.org/wiki/Interpersonal_ties (last visited Nov. 28, 2010).

. . . Myers welcomes the tit for tat.

> "Look, I may not agree with Pink Slip – I don't know what his or her real name is – but sometimes Pink Slip makes comments that are good counterpoints that I haven't considered," he says. "In my everyday life – my offline life – I'm not in conversation with way far left people. On my site I am."[129]

The self-correction in the above quote is most revealing in its recognition that the "online life" and the "offline life" are part of "everyday life." Such recognition evidences the influence of the Internet on the nature of social relations. These anonymous conversations involve a richer exchange than the sharing of files in that they engage the intellect and cause self-reflection in the receiver of the message. However, they still lack the affect of face-to-face interpersonal relations. This type of relationship has become ubiquitous in cyberspace. Benkler's observation on the important function of these weak ties seems affirmed.[130]

> In 1995, Robert Putnam, a political scientist at Harvard, wrote the controversial essay "Bowling Alone," in which he argued that membership in civic organizations is declining and that this trend weakens our democracy. But the Internet, particularly social network, has redefined networking, says Rory O'Connor, a fellow at Harvard's Shorenstein Center on the Press, Politics and Public Policy. "Online, what we have are looser but more extensive networks. I'm 50 years old and I'm on Facebook with people I went to grade school with. Online, you have more people in your social network, and to a certain extent, you trust them. You get exposed to more points of view."[131]

3. Management and Coordination

The campaign was structured so that the actions of volunteers were charted and the more active the volunteer, the more access to data and tools they were given. Thus, there was a great deal of self-organizing and autonomous action that was facilitated, not dictated, by the center. The structured viral organization and communication introduced earlier was essential to run and sustain this required level of activity.

> "I think what was recovered in this campaign is the sense of what

129. Vargas, *supra* note 122.
130. YOCHAI BENKLER, WEALTH OF NETWORKS 361-72 (2006).
131. Vargas, *supra* note 122.

> leadership is, and what the role of the technology is, so that you get the best out of both," says Marshall Ganz, a public policy lecturer at Harvard who designed the field-organizer and volunteer training system used by the Obama campaign. "The Dean campaign understood how to use the Internet for the fund-raising, but not for the organizing."[132]

Face-to-face contact is the life-blood of politics, a highly labor intensive and decentralized activity. It remains at the core of the political. The Internet as a coordinating tool allows the administration of this local activity to be shifted away from local volunteers, whose time is much better spent in face-to-face contact with each other and voters. It facilitates promotion, scheduling, enrollment and gathering/targeting of local data, where centralized messages can be branded locally and delivered to specific areas. The key is to get local members to use the tools to deliver the messages.

The nuts and bolts of what types of face-to-face opportunities will be available and the specifics of who discusses what topics with whom over the phone, via e-mail or in collaborative projects will vary according to developing interests. However, it is important to create organizational opportunities across media with multi-lateral purpose.

> "The integration of technology into the process of field organizing. . . is the success of the Obama campaign," says [Stanford] Dickert, who worked as John Kerry's chief technology officer for the 2004 campaign. "But the use of technology was not the end-all and be-all in this cycle. Technology has been a partner, an enabler for the Obama campaign, bringing the efficiencies of the [I]nternet into the real-world problems of organizing people in a distributed, trusted fashion. . . ."
>
> . . . .
>
> . . . These neighborhood teams have both phone-banked and physically knocked on doors to make sure that voters are registered and know where to vote — an effort that will continue all the way

132. Stirland, *supra* note 117;

> ['This] year the paradigm got turned upside down and truly became bottom up instead of top down.' To a considerable extent, Republicans and Democrats say, this is a result of the way that the Obama campaign sought to understand and harness the Internet (and other forms of so-called new media) to organize supporters and to reach voters who no longer rely primarily on information from newspapers and television. The platforms included YouTube, which did not exist in 2004, and the cellphone text messages that the campaign was sending out to supporters on Monday to remind them to vote.

Nagourney, *supra* note 116.

through Election Day.

> But the calling won't be a completely random affair. The Obama campaign will give volunteers access to databases that have been constantly updated throughout the summer through its field-office computers, and through myBo — Obama supporters' nickname for myBarackObama.com — with information about potential voters' political leanings. The information in the database has accumulated over time from previous election campaigns, and is constantly updated with information gathered at people's doorsteps by canvassers like Scanlon, and through phone calls. [133]

The real pay-off to the Internet may reside in the cross-space impacts. Cyberspace dramatically enhances the ability to conduct political activities.

> For many viewers, the 2008 election has become a kind of hybrid in which the dividing line between online and off, broadcast and cable, pop culture and civic culture, has been all but obliterated.
>
> Many of the media outlets influencing the 2008 election simply were not around in 2004. YouTube did not exist, and Facebook barely reached beyond the Ivy League. There was no Huffington Post to encourage citizen reporters. . . . These sites and countless others have redefined how many Americans get their political news.
>
> When viewers settle in Tuesday night to watch the election returns, they will also check text messages for alerts, browse the Web for exit poll results and watch videos distributed by the campaigns.
>
> . . . .
>
> . . . "The role of gatekeepers and archivists have been dispersed to everyone with Internet access."[134]
>
> Nearly a third of all household Internet activity in North America takes place while the user watches television, suggesting new and old media often share rather than compete for attention, the Nielsen

133. Stirland, *supra* note 117.

134. David Carr & Brian Stelter, *Campaigns in a Web 2.0 World*, N.Y. TIMES, Nov. 3, 2008, at B01.

Company said in a report on Friday.[135]

The key role is a volunteer with access to institutional resources – a facilitator. In the viral model of biological infection, she is analogous to a carrier. In the marketing space, she is the maven. In the viral model of Internet communications, she facilitates communications between members. She is wedged in the middle as the liaison between the suggestion box and the leaders, the difference between posting a blog and expecting a reply.

> Two days before Super Tuesday and more than a month before the Ohio primary, Stoynoff made a two-minute YouTube video and e-mailed it to her Akron for Obama online group. "Please feel free to forward this link to those who you might need a bit of encouragement to make their primary decision," she wrote in the e-mail. [136]

The amplification of the power of the organization through viral communications lies in the ability to forge new discussion groups, chats and subcommunities, which strengthen the shared sense of purpose and ownership. Facilitators communicate with each other to learn more about the usage and tendencies of their members, and they thus feel comfortable and confident in managing the commons and ensuring that the members know where the most promising opportunities for collaborative action develop. They are the core of the reputation system that must be established in order for authentic, trustworthy, many-to-many communication to exist.

Discipline is based on social norms, not authority relations of power. "Ostrom found that some system to monitor and sanction members' actions was a common feature of every successful community . . . [,] not simply a way of punishing rule-breakers but also a way of assuring people that others are doing their part. Many people are contingent cooperators, willing to cooperate as long as most others do."[137]

> Scanlon logs her activities on myBo, which awards points for various volunteer activities. The point system helps other would-be supporters figure out who they can hook up with locally if they want to get more involved in the campaign, says [Chris] Hughes, [a co-founder of Facebook, who left that company to help Obama with his

135. Steve Gorman, *Nielsen Finds Strong TV-Internet Usage Overlap*, REUTERS (Oct. 31, 2008, 6:51 PM EDT), http://www.reuters.com/article/idUSTRE49U7SC20081031.

136. Vargas, *supra* note 122.

137. HOWARD RHEINGOLD, SMART MOBS: THE NEXT SOCIAL REVOLUTION 45 (2002).

online organizational efforts].

> "If you go to your local group in your small town, you can immediately find out who's the most active person and who just joined the group for the sake of joining the group," Hughes says. "And that gives you, the individual Obama supporter, much more information. You can measure your own activity against others, and you can contact the most active people within the groups."[138]

A variety of crucial external activities are enhanced in the new environment. The obvious ones are funding and outreach. The funding aspect attracted the greatest attention and was already apparent in 2004.

> Even more crucial to the way this campaign has transformed politics has been Mr. Obama's success at using the Internet to build a huge network of contributors that permitted him to raise enough money — after declining to participate in the public financing system — to expand the map and compete in traditionally Republican states.[139]
>
> . . . .
>
> . . . When Senator Obama's campaign sought to make one last push with a 30-minute infomercial, it bought time on three major networks, using money harvested on one platform – the Web – to buy time on another – broadcast television.[140]

Raising resources is a central organizational challenge. Members customize contributions (method, frequency, direction/cause). They must be supplied with a simple, confidential way of adjusting the amount and direction of their contributions so as to generate the full feeling of efficacy at the funding level.

> Stoynoff, on the other hand, has been working for Obama's campaign for nearly two years. She has also donated about $150 to Obama. "I feel like I own a piece of this campaign. Like, I've bought and paid a piece of it, with work and heart and effort," she says. [141]

The magnitude of the Internet small-donor fundraising is staggering. Obama raised substantially more in donations under $200 than McCain raised in total, indeed more than any presidential candidate

138. Stirland, *supra* note 117.
139. Nagourney, *supra* note 116.
140. Carr & Stelter, *supra* note 134.
141. Vargas, *supra* note 122.

had ever raised.

> The system for financing campaigns in place for a generation has been shattered as a result of this year's race and will have to be replaced.
>
> . . . .
>
> . . . "Internet small-donor fund raising is the most positive thing I have seen in 36 years of working on this," says Fred Wertheimer, head of Democracy 21, a nonpartisan group that studies campaign financing. "If we can make that work in a systematic way instead of just for one or two candidates, then you really have revolutionized the funding of American politics.[142]

C. Exploiting the Communications Resource

Another important area of traditional political activity impacted by the new environment and organization is outreach.

> National campaigns have rarely bothered with places like Avery, put off by small populations, low fund-raising potential and a perception of entrenched support for one party. The Internet is making it worth trying by connecting powerful databases of detailed information on millions of voters with trained teams of local volunteers.
>
> "Ironically, it took the Internet to get us back to the old-fashioned way of doing politics," says Mark Sullivan, the founder of a start-up called Voter Activation Network. . . .
>
> . . . .
>
> . . . In the 1980s, presidential campaigns became increasingly top-down efforts run by well-paid professionals who focused on marketing and direct mail. The growing efficiency of computers, telemarketing and advanced poling rendered grass-roots campaigning and political organizing largely obsolete . . . .
>
> . . . .
>
> . . . Two decades later, presidential candidates proved the strength of the Internet in fund raising . . . .

142. Gerald F. Seib, *Campaigns are Where the Real 'Change' Will Take Place*, WALL ST. J., Nov. 2, 2008, at A6.

. . . .

> . . . The Obama and McCain campaigns are now onto the next challenge: harnessing the Internet to turn online support into well-organized offline activity.[143]

Just as the explosion of autonomous behavior dramatically loosened the control of the dominant firms in the music sector, the democratization of production and ease of distribution transforms the role of the media in the political sector. "Perhaps drawing on Mr. Obama's background as a community organizer, his campaign decided early on to build a social network that would flank, and in some case outflank, traditional news media." [144]

> This year's campaign also has marked a change in the role the press plays. The prominence, readership and influence of online political sites has mushroomed, taking away some of the prominence of the mainstream media – traditional television networks, newspapers and news services. Campaigns have taken to getting out word of pending shifts in strategy by leaking them to political web sites, and both parties catered to bloggers at their conventions.
>
> . . . .
>
> . . . The Web also may have diminished to some extent the power of campaign attack ads, because the targets of such attacks can use the Internet to instantly blast out rejoinders and rebuttals. That limits the time charges may linger unanswered.[145]

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143. Rhoads, *supra* note 125.

144. Carr & Stelter, *supra* note 134.

145. Seib, *supra* note 142;

> Last week alone, the campaign uploaded 70 videos, many of them tailored to battleground states – the campaign used peer-to-peer communications to build a juggernaut that did not depend on the whims and choices of the media's collective brain trust.
>
> . . . .
>
> . . . In fact, the most popular videos on BarackObama.com weren't TV ads; they were biographical and Web-only spots.
>
> . . . .
>
> "I think that this time around, campaigns got used to the fact that anything that they put out there could be pirated, remixed, mashed-up and recirculated," said Henry Jenkins, a professor at the Massachusetts Institute of Technology. "It is a much more rapid environment."
>
> . . . .
>
> . . . With 5 million views since March, Mr. Obama's 37-minute speech about race is the most popular video on his YouTube Channel.

Carr & Stelter, *supra* note 134.

The traditional mass and local media are left scrambling to adapt, forced to rework their practices to accommodate the new interactive, two-way nature of the media environment.

> The networks and their newspaper counterpart[s] have not simply waited to be overtaken. Instead, they have made specific efforts to engage audiences with interactive features, allowing their content to be used in unanticipated ways, and in many efforts, breaking out of the morning paper and the evening newscast.
>
> "Old media outlets – the networks and newspapers – learned a lot of lessons from the last cycle and did not allow others to win the online space this time," said Rick Klein, the senior political reporter for ABC News.
>
> . . . .
>
> . . . But network news divisions are expensive operations based on a television business model. They can't run the relatively small money that online advertising draws but they can't compete for audiences if they ignore the Web.[146]
>
> Major media organizations expect record-breaking traffic on their Web sites as they follow results in the race between Republican John McCain and his Democratic opponent Barack Obama.
>
> Cable network Current TV is taking its coverage a step further, relying entirely on Web users to provide its news content.
>
> TV networks' plans for heightened Web coverage would seem to serve their audiences well.
>
> . . . .
>
> . . . The New York Times is asking its Web site visitors to take pictures of their polling places and upload them, providing an election day snapshot of the nation. The news sites will also have up-to-the-minute election maps.
>
> . . . .

146. Carr & Stelter, *supra* note 134.

> . . . On a smaller scale, political Web sites Town Hall and The Huffington Post will follow the election from conservative and liberal viewpoints, respectively. Nonprofit group Video the Vote plans to post up to 1,000 video reports, focusing on any problems at the polls in a form of "citizen journalism."[147]

Given the history of negative campaigning, the impact that new media have had on that type of campaigning is dramatic. The speed and transparency of the decentralized and highly interconnected media alters the environment. The crowd sourcing aspect of rapid response is indicative of a major impact that structured viral communications can have on the role of the media.[148]

As with the other elements of the viral model at the core of the new organization, the viral response to the flow of information mixes the chaos of the Internet with directed activities of the organization. "Bubbling up" is not entirely random. There are triggers that stimulate the flow.

> Meanwhile, the Obama campaign has run a sophisticated pushback of its own, tapping a large volunteer corps through its "action wire" to

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147. Alex Dobuzinski, *Media Groups Turn on Web for Election Cover*, REUTERS (Nov. 3, 2008, 3:27 PM EST), http://www.reuters.com/article/ idUSTRE4A262V20081103.

148. Ari Melber, *Web puts Dog-Whistle Politics on a Leash*, THE NATION, Nov. 17, 2008, *available at http://www.thenation.com/article/web-puts-dog-whistle-politics-leash*.

> Everyone can hear it now. This Internet-driven, hyperactive presidential race is forcing accountability on two of the oldest tricks in politics: dog whistles and secret smears.
>
> With a "dog whistle," politicians use code words to signal unpopular stances to one target audience, while avoiding a backlash because the reference is lost on others . . . . Secret smears run on a similar axis, enabling politicians to undermine an opponent without taking responsibility for the attack. But the times are changing.
>
> . . . .
>
> . . . Partisan and muckraking bloggers now fight political operatives' efforts to keep unseemly attacks below the radar. Take automated "robo" phone calls, which often deploy the sharp attacks that campaigns don't want exposed in the mass media. Previously, the calls were obscure, rarely drawing major media coverage, let alone sustained criticism. Now they can be recorded, uploaded and dissected in a single news cycle. Sites like TalkingPointsMemo and Daily Kos use crowd-sourcing by readers to track the attacks and pin them squarely on John McCain. Insider political sites, like Ben Smith's *Politico* blog, also disseminate the audio recordings to media and political elites, converting a "targeted" message into a mass broadcast. And organized campaigns like the National Political Do Not Call Registry use the web, Twitter and e-mail to track and map every call.
>
> As a hub for intelligence, the web can enlist people in "bubbling up reports" of everything from robo-calls to US attorney firings, explains TechPresident co-founder Micah Sifry, a web activism expert who heralds the trend as a new era of "crowd-scouring" the presidency. He argues that information can whip around online with or without a political agenda. "Even without central direction, the crowd is scouring the world for interesting news and sharing tidbits constantly."

expose smears and contact local media about unfair attacks. The campaign launched two portals, FighttheSmears and BelowtheRadar, to fight what it calls a stealth Republican operation "to quietly poison voters' information with lies and fear tactics."

All this online activity has been amplified by the rapidly shifting landscape of political television. The increasingly opinionated cable news programs, always in search of conflict and fresh content, now treat debates over these tactics as a major campaign issue. This emphasis is bleeding into the broader campaign discourse, which includes minute dissection of attacks that were once considered unmentionable.

. . . .

. . . Run the tape back to 2000, and Bush was never forced to fully answer for one of his most vile political attacks, the racist smear against John McCain's family in the South Carolina primary. Today, it is hard to imagine a candidate in either party sliding through a presidential primary without a huge backlash for deploying that kind of attack.

This cycle, in fact, even faint dog whistles are called out in real time . . . .

. . . .

. . . "Thanks to YouTube— and blogging and instant fact-checking and viral emails—it is getting harder and harder to get away with repeating brazen lies without paying a price, or to run under-the-radar smear campaigns without being exposed," contends Arianna Huffington whose website pulses with a constant, two-way debate of news and opinion.

. . . .

. . . This new media environment undermines political attacks that turn on coded meanings and hidden messages, because now anything can be exposed and cheaply disseminated. Observers used to worry that the web would fragment our media consumption into private little silos—that famous "Daily Me." Yet in presidential politics, an inverse dynamic is emerging. Small groups of people are using the web to expose the targeted appeals of the analog world, and then injecting them into the mass media for the whole nation to assess.

And many voters do not like what they see.[149]

CONCLUSION

This analysis has emphasized four broad points.

First, that the basic economics of production and transaction cost have been dramatically lowered. In the music space, $15 albums were replaced by $1 singles as the highest volume units delivered. In the book publishing space, the cost of a digital book is less than half that of a physical book. In politics, the cost to get a vote is the key output. A study by the University of Michigan estimated that the cost to get a vote with a phone bank, the classic late 20th century approach, was $20 per voter, whereas text messaging cost per voter was only about $1.56.[150] This drop is of roughly the same order of magnitude as in music (see Figure III-4).

Second, the relations of production change as well. A blog in the Harvard Business Review summarized the fundamental difference between the Obama campaign and the Hillary Clinton campaign as the difference between treating supporters as members versus customers.[151]

Third, the economic efficiency and effectiveness of communications are the cornerstone of the transformation, but the outcome is not inevitable. The incumbent can delay and distort the development of institutions to favor its interests at the expense of consumers.

Finally, and most importantly, I have argued that it is the social

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149. *Id.*

150. Allison Dale & Aaron Strauss, Mobilizing the Mobiles: How Text Messaging Can Boost Youth Voter Turnout (Sept. 6, 2007) (unpublished doctoral study, Princeton University & University of Michigan), *available at* http://www.mindlessphilosopher.net/princeton/Youth%20Vote%20and%20Text%20Messaging_9.6.07.pdf.

151. John Sviokla, *Members v. Customers: How the Obama and Clinton Online Campaigns Differ*, HARV. BUSINESS REVIEW BLOGS (Jan. 7, 2008, 3:47 PM), http://blogs.hbr.org/cs/2008/01/members_vs_customers_how_the_o.html.

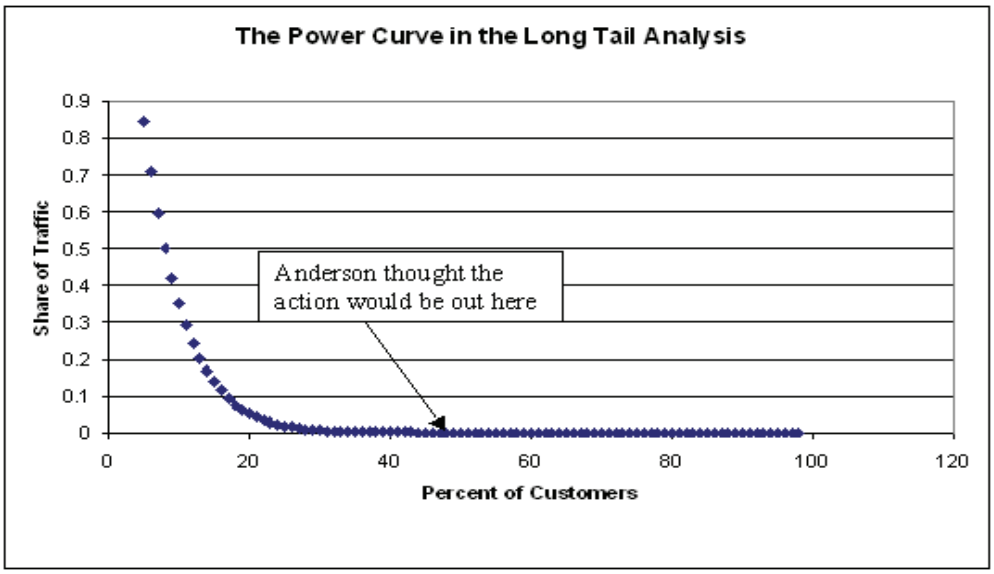
> On Tuesday, January 8, the giants of the presidential battle knocked heads in the always important New Hampshire primary, and far beneath the froth of issues and image is a fascinating difference between how two of the Democratic presidential candidates compete online: Hillary Clinton treats her supporters as "customers" and Barack Obama, as "members."
>
> When you give money to Clinton's campaign, you get a confirmation. When you give money to Obama's, they automatically create a personalized membership location for you which looks a lot like a Facebook page. Thereafter you log in at my.barackobama.com. Mass customization is not the new thing here - Joe Pine nailed that idea many years back. What Barack's online team understands and Hillary's does not, is that engagement - not just money - is how you win in this new peer-to-peer, attention-scarce, content-overloaded media melee of the Web - and money follows. With the race heating up, the candidates' online customer relationship management (CRM) strategies will play an important role.

organization that uses these technologies that ultimately matters most. Light handed-hierarchy allowed viral communications to take place in a task-oriented organization and came together to bring unprecedented resources to bear.[152]

152. Benjamin Boer, *The Obama Campaign: A Programmer's Perspective*, 7 QUEUE 1, 36 (Jan. 2009).

> A computer programmer who worked one Obama campaign made the point. "Obviously, social networking played a huge part in organizing people, but other models that are important to look at are the open source development . . . models. Additionally, the campaign mode extensive use of data analysis . . . .
>
> . . . .
>
> . . . [B]ecause the people were in sync with the concept of grassroots experimentation, when a concept was successful, it was nurtured and the resources were provided to expand it . . . .
>
> . . . .
>
> Open source development, with its focus on distributing the ability of developers to add to an existing code base in a controlled but expansive manner, reflected the campaign's dependence on a far-flung set of leaders and volunteers. People in both universes brought their unique talents to the project. Equally as important, when a set of tasks was not accomplished as planned, resources could be moved to the problem at hand. In the same way that volunteers flowed from making calls in Pennsylvania to making them in Indiana, developers were able to flow from data exchange to the call tool.
>
> . . . .
>
> . . . Each state organization had been given great leeway in designing how it was going to use the available systems, and ad hoc development of scripts and extensions of the systems were necessary as different teams attempted to stretch the data systems. For each primary, however, the relevant team was reconfigured, bringing best practices in from many locations and refactoring and consolidating processes that had been developed for targeting and scoring voters. This willingness to experiment with data analysis and then expand its use is indicative of how the campaign operated.
>
> . . . Ideas could be tried, tested, and changed. Once an idea proved successful, it could be expanded and rolled out to thousands or hundreds of thousands of people with incredible speed.
>
> . . . .
>
> . . . Platforms that could be easily configured allowed operations quickly to move processes, such as hiring and procurement, from headquarters to the hundreds of offices that were eventually established, yet allowed for centralized control of these processes. In other instances, programs such as Precinct Captain were designed in the state offices using simple platform tools and then extended to other programs with more concerted development efforts. *Id.*

Figure I-1


The Power Curve in the Long Tail Analysis
Share of Traffic
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Anderson thought the action would be out here
0
20
40
60
80
100
120
Percent of Customers

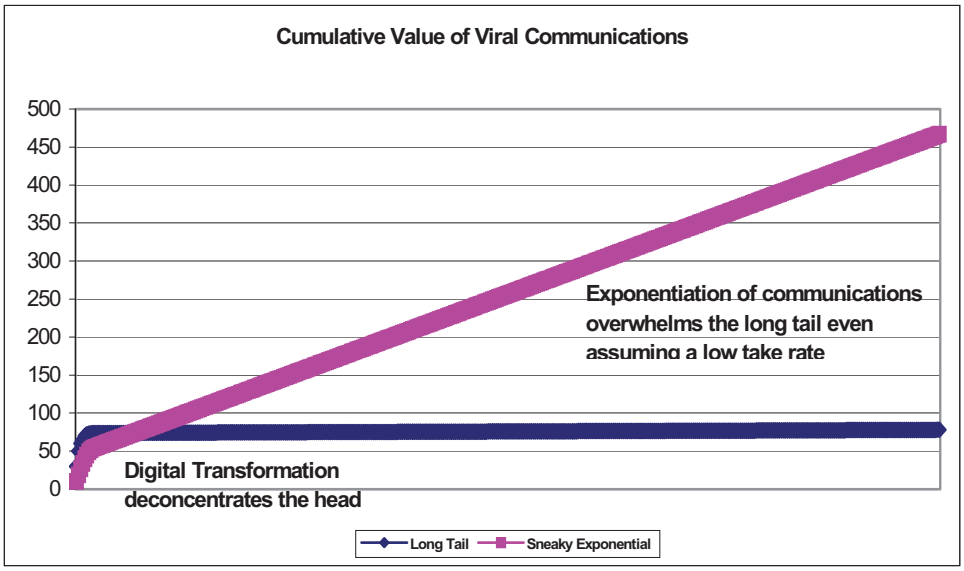
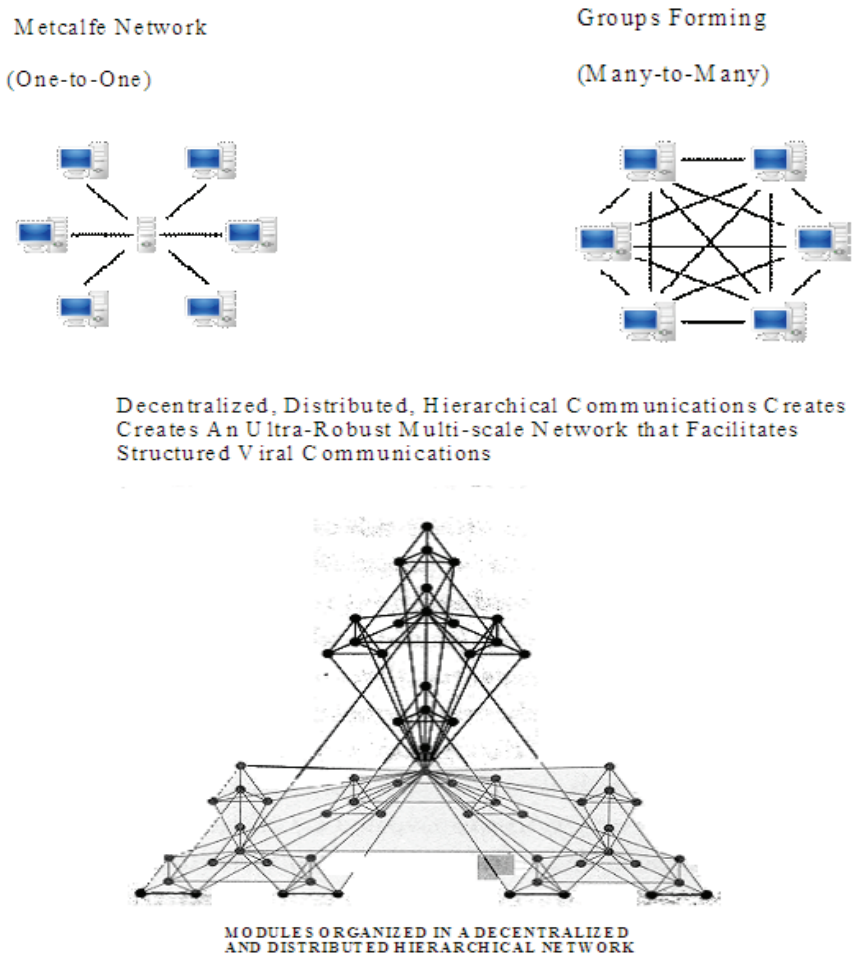

Cumulative Value of Viral Communications
500
450
400
350
300
250
200
150
100
50
0
Exponentiation of communications overwhelms the long tail even assuming a low take rate
Digital Transformation deconcentrates the head
Long Tail
Sneaky Exponential

Figure I-2: *Network Architectures*[153]



153. *See* David P. Reed, *That Sneaky Exponential – Beyond Metcalfe's Law to the Power of Community Building*, http://www.reed.com/dpr/locus/gfn/reedslaw.html (last visited Dec. 21, 2010); ALBERT-LASZLO BARABASI, LINKED 145, 233 (2003).

Table I-1: Sources of Organizational Advantage

Resource Base

Focal point of Activity	**Resource Exploited**	**Process**	**Benefit**
Autonomous transactions	Local Knowledge	Consumer as producer	Better Fit Between needs & output
Demand side value creation	Network	Self-organizing	Increased option value
Supply-side			
Mesh Networks	Spectrum	Embedded Coordination	Dynamic Occupation
Open Source	Software Code	Embedded Knowledge	Exploit rich information
Peer-to-Peer (music, video)	Content, Storage, Bandwidth	Torrenting, Collaboration	Cost Reduction
Party/campaign	Engagement	Texting, shared lists	Resources, Time

Table I-2:
Structured Viral Organization Resolution of Organizational Challenges[154]

Why do people choose to cooperate? In each case there is a key resource that is exploited more effectively by the new organizational form (smart radios: spectrum; open source: rich information; digital music: content and bandwidth; political organization: engagement), rewarding the participants with a higher level of performance.

Who gets to participate according to the rules of entry? Entry into the organization is easy and open – permission is not needed.

Where are the positions located? The organization is horizontal, socially and geographically. This does not mean there is no hierarchy and rules of order – shallow hierarchy exists (the ratio of members to managers is very high), as do rules of how the participants in the network interrelate.

What are members allowed to do in those positions? In all cases, the importance of centralized control is reduced and local action and autonomy is important. Allowing and encouraging collateral and viral communications between members through shared tools and protocols are a key strength of the new organization. Communications become multi-purpose.

How are they motivated? Task-specific rewards are enjoyed (e.g. use of the resource, victory in the election) and involvement is pleasing, as is reputational gain).

How are the disciplined? Norms of peer-to-peer relations of equality are the central disciplining force, not relations of power.

How are they monitored to comply with the rules? Communications intensive organization lowers monitoring costs and facilitates collective action.

154. OSTROM ET AL., *supra* note 6, summarized tersely at 41-42.

Table I-3: *Organizational Challenges of Cost Shifting*[155]

Full Cost Recovery (fixed, variable, transaction),

Commitment (Monitoring & Enforcement. Default & Report),

Price Discrimination (Cost allocation rules inverse elasticity, equal burden, equal benefit)

Social Challenges of Cost Shifting

Tethering, Competition, Free Riding, Waste, Predation,

Strategies for Shifting Cost Recovery

Different Time	Different Product	Different people
Pre-payment (lay away plans)	Strong Complements	Buyers
Post-use payments (subscription)	Bundling of weak complements	Sellers
	Tied Products	Advertiser
Tapping Traffic Flows	Enhanced Versions	
Loss leaders		
Trial Subscription		
Training		

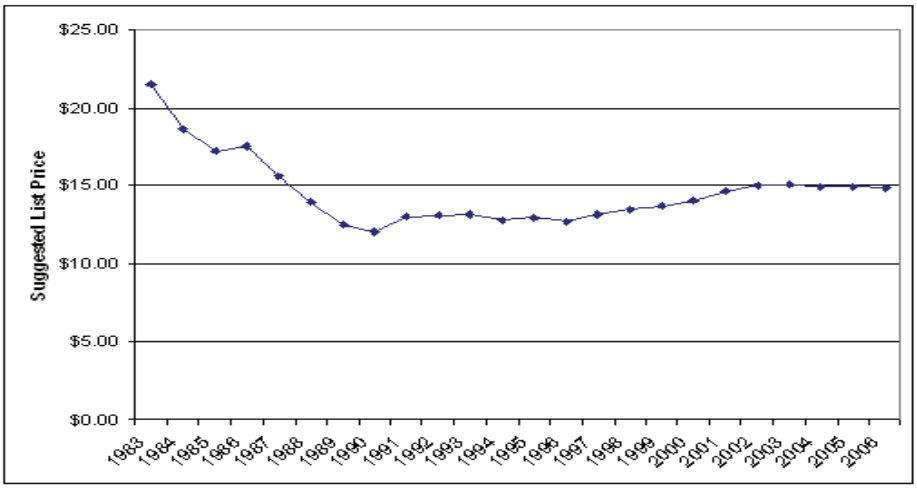
Table I-4:[156]

ANDERSON'S SCARCITY/ABUNDANCE PARADIGM HAS GOTTEN IT HALF RIGHT
SCARCITY IS THE WRONG MODEL; FREE, CHAOS IS NOT THE RIGHT MODEL

PRESTON PADDEN	CHRIS ANDERSON	NEW INSTITUTIONAL ECONOMICS
IMPOSE SCARCITY	IMAGINE ABUNDANCE	CREATE PLENTY
Everything is forbidden unless permitted	Everything is permitted unless forbidden	Struggle to solve the problems of cooperation to reap the advantages not only of technology but also all of the other facets of human endeavor that constitute civilization
Paternalism	Egalitarianism	Collaboration
Business Model Profit	We'll figure it out	People are encouraged to do useful things because of expansion of shared resources
Top down	Bottom-up	Mild-hierarchy, Central support
Command and Control	Out of control	Norms of peer relations

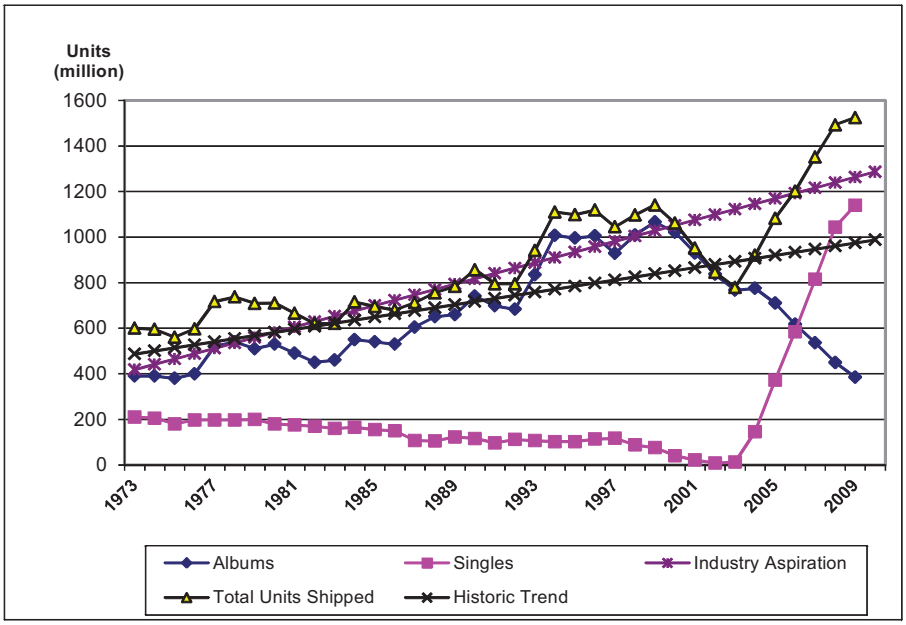
155. *See id.*
156. *See id.*

Figure II-1: *CD List Prices*



Source: RIAA, *The CD: A Better Value Than Ever,* **August 2007**

Figure II-2: *U.S. Sales of Albums and Singles 1973-2009*[157]



157. RECORDING INDUSTRY ASS'N OF AMERICA, ANNUAL STATISTICS (various years); Boorstin, *supra* note 19 (Growth trends are linear projections described in text).

Figure II-3: *RIAA Claimed Shipments of Singles*[158]

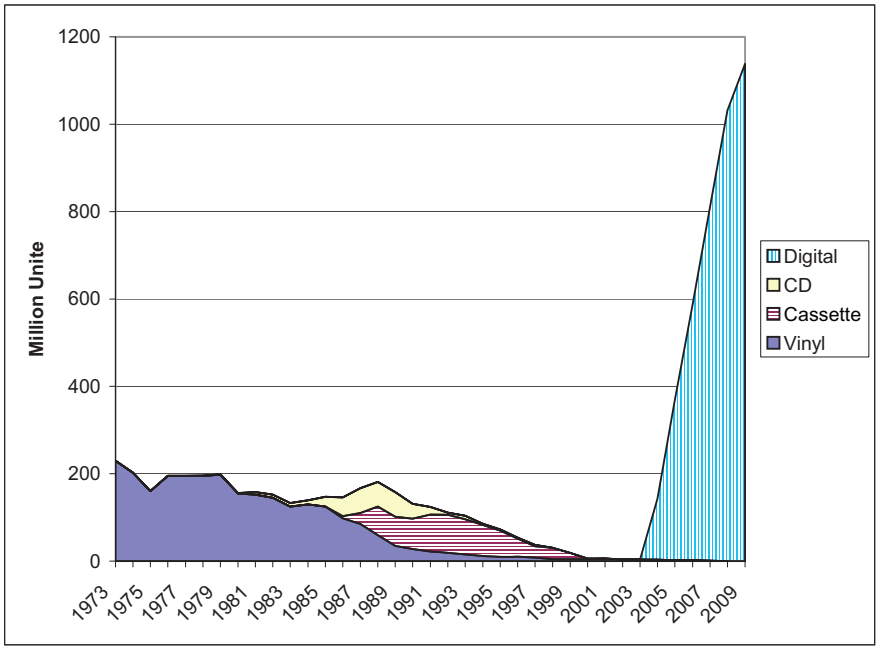
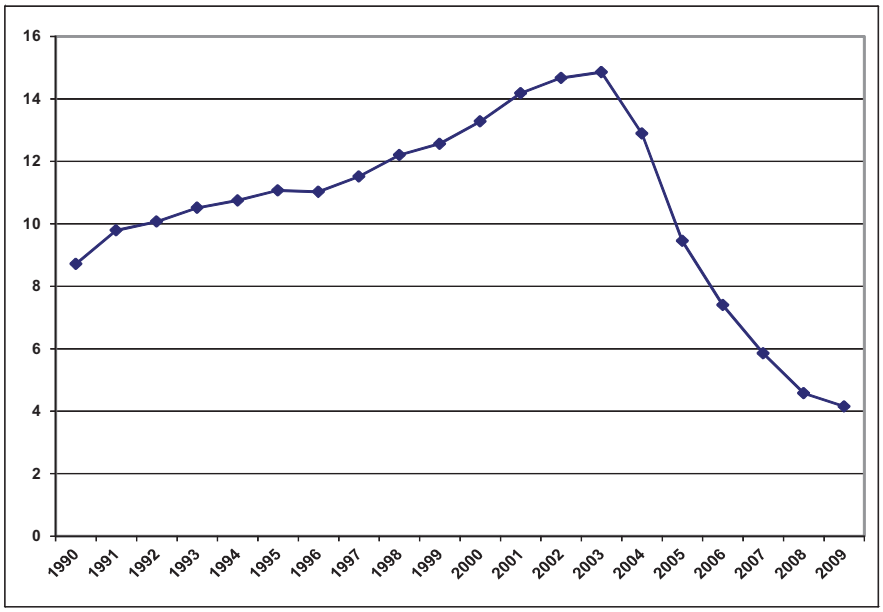


Figure II-4: *RIAA Revenue Per Unit Shipped*[159]



158. RECORDING INDUSTRY ASS'N OF AMERICA, *supra* note 157.
159. *Id.*

Figure II-5: *Who Get What from the Music Consumer Dollar*[160]

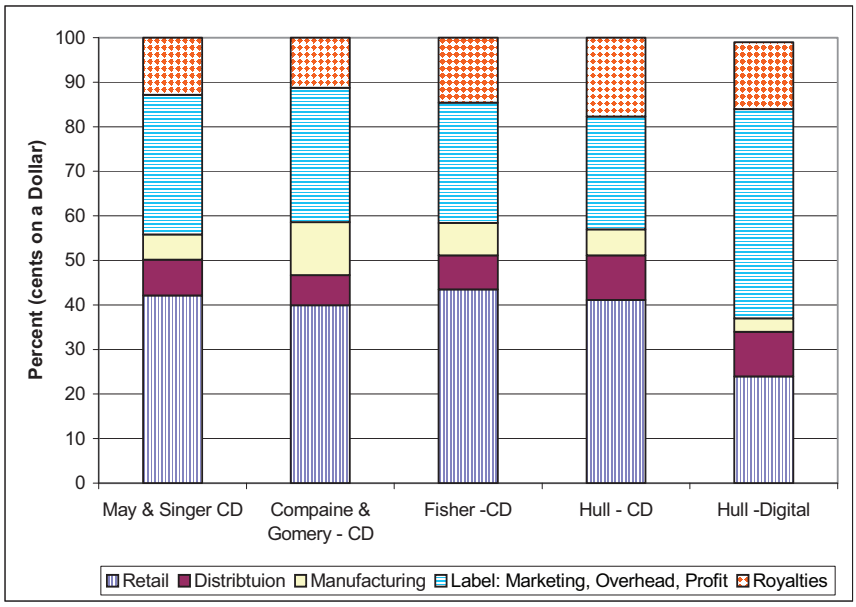
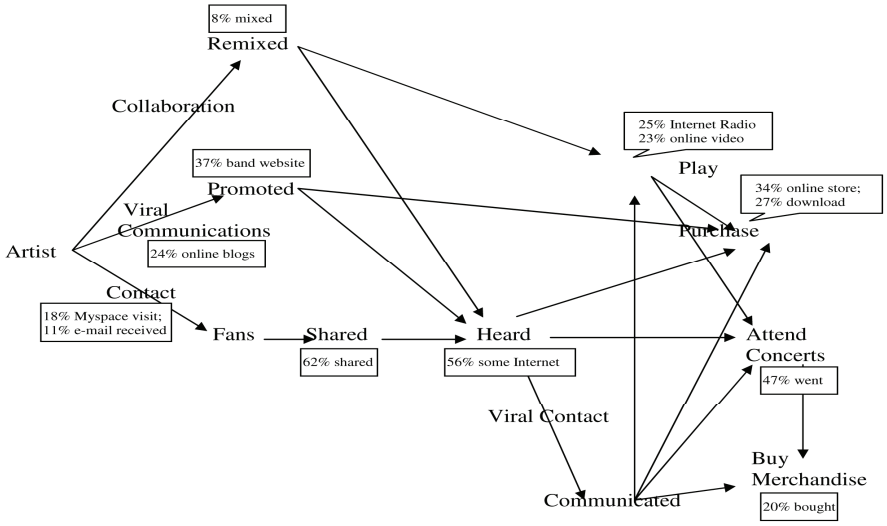


Figure II-6: *Digital Production and Distribution Enhances the Artist's value Proposition*



160. WILLIAM W. FISHER III, PROMISES TO KEEP 259-64 (2004); HULL, *supra* note 40, at 259.

Figure II-7: *Enhancing the Artist's Value Proposition in the Digital Age*[161]

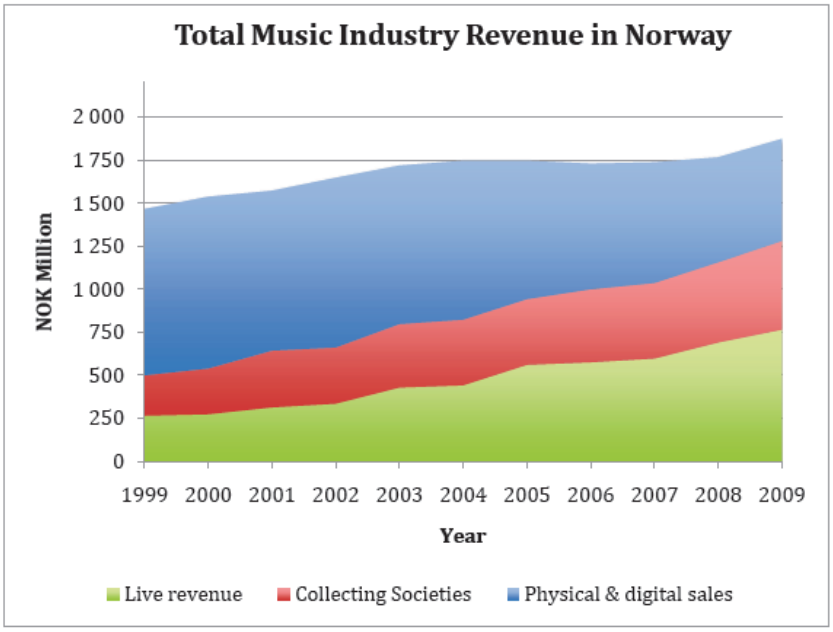
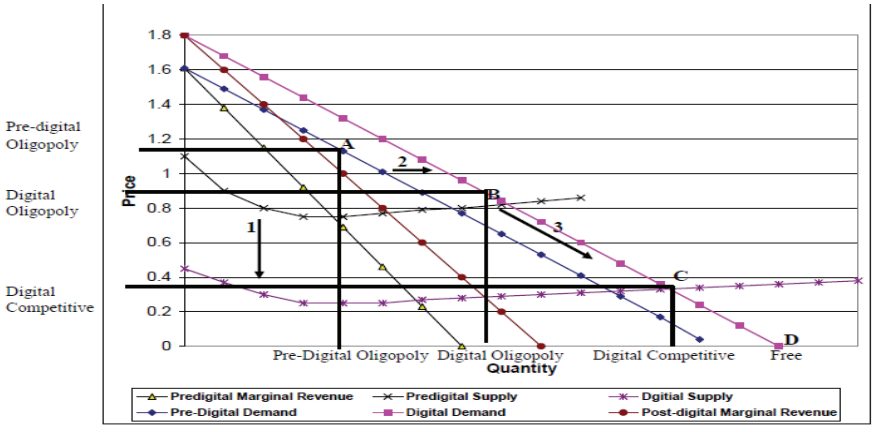


Figure II-8: *Recording Industry Supply, Demand and Marginal Revenue*



161. Richard Bjerkoe & Anders Sorbo, Then Norwegian Music Industry in the Age of Digitalization 62 (Jan. 9, 2010) (unpublished thesis, Norwegian School of Management), *available at* http://www.scribd.com/doc/37406039/Thesis-Bjerkoe-Sorbo.

Figure II-9: *Newspaper Revenues*[162]

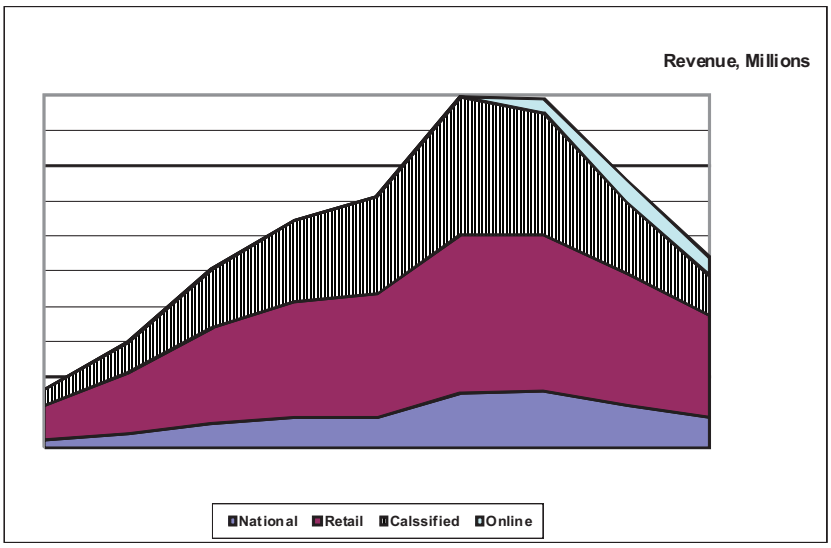
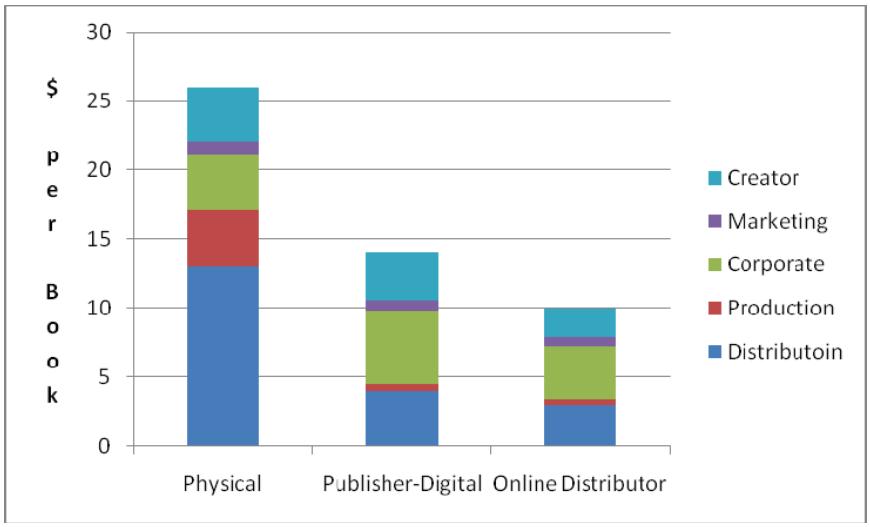


Figure II-10: *Differing Views of Digital Book Economics*



162. *Trends & Numbers*, NEWSPAPER ASS'N OF AM. http://www.naa.org/trendsandnumbers.aspx (last viewed Dec. 21, 2010).

Figure III-1: *PHYSICAL SPACE AND CYBERSPACE INTERSECT ON THE AXIS OF POLITICAL ACTION*[163]

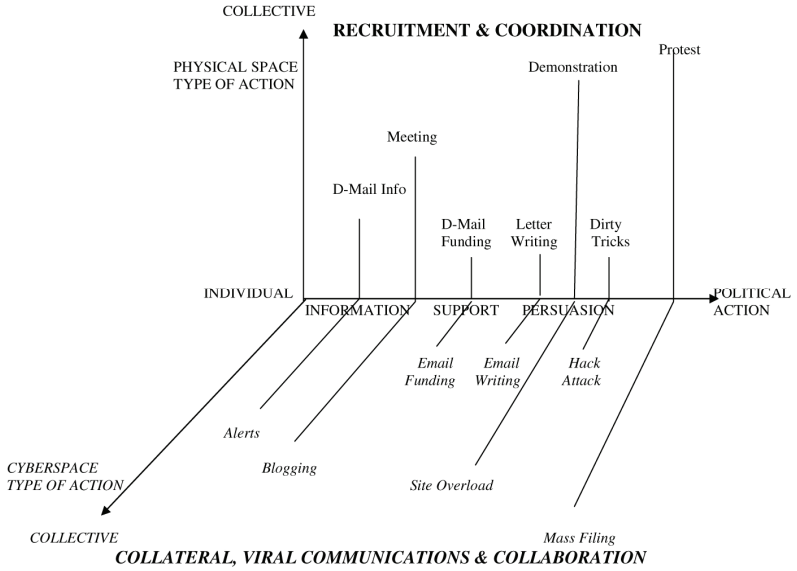
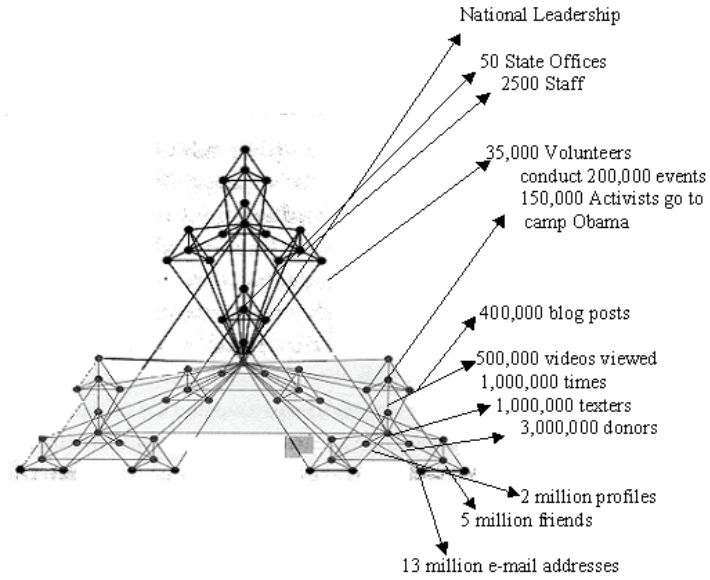


FIGURE III-2: *Structured Viral Communications in the Obama Campaign*



163. Mark Cooper, *Political Action and Organization Building: An Internet-based Engagement Model*, in ONLINE DELIBERATION: DESIGN, RESEARCH, AND PRACTICE 194 (Todd Davies & Seeta Pena Gangadharan eds., 2009).

FIGURE III-3: *ROLES, FUNCTIONS AND ACTIVITIES*

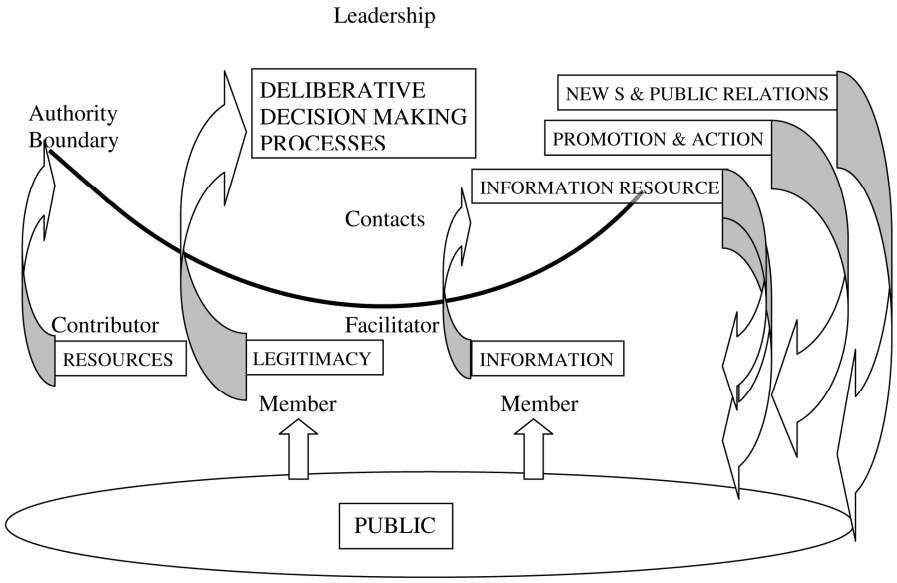
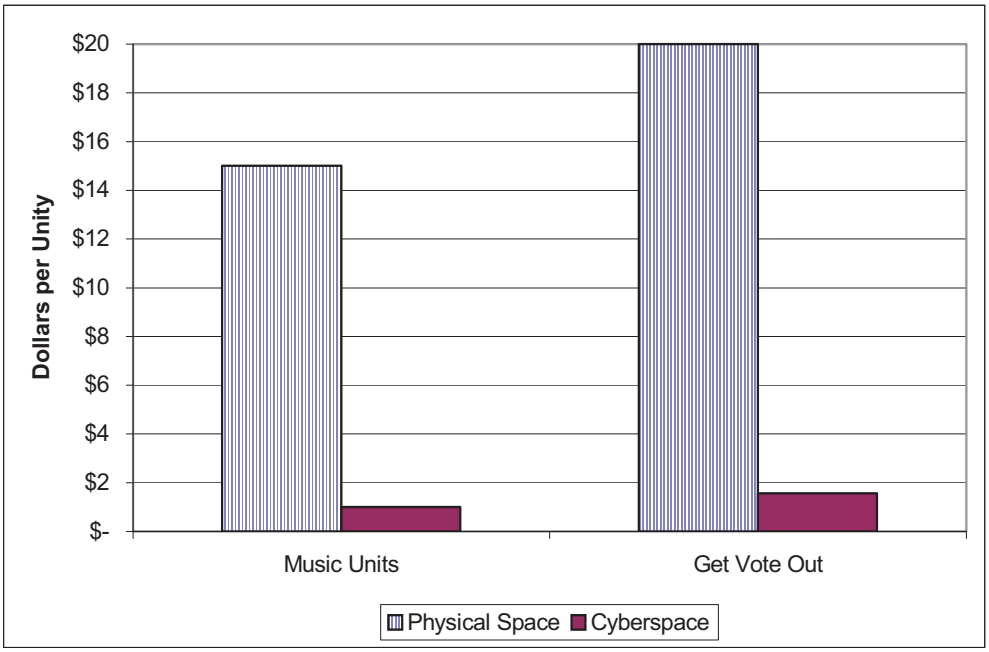


Figure III-4: *Declining Cost of Production: Dominant Technology*[164]



164. Cooper, *supra* note 23; Alex Dobuzinski, Media Groups Turn on Web for Election Cover, Reuters (Nov. 3 2008, 3:27 PM EST) http://www.reuters.com/article/idUSTRE4A262V20081103.

DIGITAL PUBLIC SERVICE MEDIA NETWORKS TO ADVANCE BROADBAND AND ENRICH CONNECTED COMMUNITIES

ELLEN P. GOODMAN* AND ANNE H. CHEN**

"We recognize the dangers of lapsing into fuzzy-minded ecstasy over the unlimited social potential of the new electronic technology. . . . [However t]he opportunity is at hand to bring us together through the teaching and inspiration possible in a noncommercial telecommunications alternative. . . . [f]rom the careful cultivation of a public discourse in its most expansive and profound sense."[1]

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** Research Fellow, University of Pennsylvania Law School. For their helpful comments, suggestions, and insights, the authors thank Joaquin Alvarado, Orlando Bagwell, Robert Bole, Jessica Clark, Sally Fifer, Jake Shapiro, and participants at the Yale Law School Knight Law and Media Program Conference on Journalism and the New Media Ecology, the Harvard Law School Berkman Center for Information Policy Luncheon Series, the University of Colorado Silicon Flatirons Digital Broadband Migration Conference, and the New School Conference on Internet as Playground and Factory. The authors are also grateful to the Ford Foundation for its support for research for this Article.

1. CARNEGIE COMM'N ON THE FUTURE OF PUB. BROAD., A PUBLIC TRUST: THE REPORT OF THE CARNEGIE COMMISSION ON THE FUTURE OF PUBLIC BROADCASTING 298-99 (1979) [*hereinafter* CARNEGIE II].

INTRODUCTION

In connection with the Federal Communications Commission's ("FCC") National Broadband Plan[2] and its ongoing Future of Media Project,[3] as well as other initiatives, we have studied how redesigned systems of digital public service media might serve the public's needs for information, communication, engagement, and meaningful narratives in the 21st century. This article is based on our comments to the Broadband Plan, which is currently being implemented.[4]

The Federal Communications Commission's broadband workshops[5] and several recent reports have documented national deficits in both the communications infrastructure and the narrative content necessary to involve the entire population in democratic decision making or foster widespread economic and social flourishing.[6] Information gaps are

2. FED. CMMC'NS COMM'N, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN (2010) [*hereinafter* THE NATIONAL BROADBAND PLAN].

3. *Future of Media*, REBOOT.FCC.GOV, http://reboot.fcc.gov/futureofmedia (last visited Nov. 8, 2010).

4. Comments of Ellen P. Goodman & Anne H. Chen to the *Notice of Inquiry* a National Broadband Plan for Our Future, GN Dkt. No. 09-51 (Nov. 6, 2009), *available at* http://fjallfoss.fcc.gov/ecfs2/document/view.action?id=7020347090 [*hereinafter* Goodman & Chen Comments].

5. *See, e.g., Workshop: Deployment Wired- General,* BROADBAND.GOV, http://broadband.gov/ws_deployment_wired.html (last visited Nov. 17, 2010); *Workshop: Deployment Unserved/Underserved*, BROADBAND.GOV, http://broadband.gov/ws_deployment_unserved.html (last visited Nov. 15 2010); *Workshop: Building the Fact Base: The State of Broadband Adoption and Utilization*, BROADBAND.GOV, http://broadband.gov/ws_adoption_fixed.html (last visited Nov. 8 2010).

6. *See, e.g.,* KNIGHT COMM'N ON THE INFO. NEEDS OF CMTY'S IN A DEMOCRACY, INFORMING COMMUNITIES: SUSTAINING DEMOCRACY IN THE DIGITAL AGE 23-32 (2009), (establishing findings for needs of information communities) [*hereinafter* KNIGHT COMM'N]; AM. UNIV. SCH. OF COMM'N CTR. FOR SOC. MEDIA, PUBLIC MEDIA 2.0: DYNAMIC, ENGAGED PUBLICS (2009), http://www.centerforsocialmedia.org/future-public-

especially wide in the areas of investigative journalism, effective teaching materials, and content directed to underserved, minority, and poor populations.[7] A number of these reports have called on digital public service media—building on, but also transcending, the legacy public broadcasting system—to help correct these deficits. Our research suggests that there are indeed opportunities to use digital public service media to drive broadband adoption and exploit broadband capacity for public purposes. But there are obstacles to doing so without significant restructuring of public service media systems.[8] In theory, and in the best traditions and highest aspirations of American communications policy, these networks can maximize the "social dividend" of broadband technology.[9] The potential is there and can be realized if public service media systems become more diverse, open, networked, innovative, technologically sophisticated, and focused on a service mission to meet public needs where the market will not go. This article offers specific proposals to further the efforts that many in the public service media community are undertaking to realize this potential.[10]

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media/documents/white-papers/public-media-20-dynamic-engaged-publics [*hereinafter* PUBLIC MEDIA 2.0]; CORP. FOR PUB. BROAD., PUBLIC RADIO IN THE NEW NETWORK AGE: WIDER USE, DEEPER VALUE, COMPELLING CHANGE: REPORT AND RECOMMENDATIONS OF THE PUBLIC RADIO AUDIENCE GROWTH TASK FORCE 1-3 (2010) (discussing the need for public service media, and media organizations at large, to engage more directly with underserved and overlooked members of the population) [*hereinafter* GROW THE AUDIENCE].

7. *See, e.g.*, DAVID WESTPHAL, PHILANTHROPIC FOUNDATIONS: GROWING FUNDERS OF THE NEWS 3-4 (2009) (discussing the expense of investigative journalism as a reason that commercial news organizations are declining to sponsor high-quality investigative reporting); KNIGHT COMM'N, *supra* note 6, at 27 (stating that journalistic "[c]overage falls short everywhere"); JOHN HORRIGAN, WIRELESS INTERNET USE 4 (2009), (referencing the digital divide in content that is provided for low-income minority groups); AFRICAN AM. PUB. RADIO CONSORTIUM ET AL., AN OPEN LETTER TO OUR PUBLIC MEDIA COLLEAGUES 4 (2009) (arguing that service failures to "America's younger and more ethnically diverse audiences" make them "public service media's great, untapped resource").

8. *See, e.g.*, Comments of Sesame Workshop to the *Notice of Inquiry* in American Recovery and Reinvestment Act of 2009: A National Broadband Plan for Our Future, GN Dkt. No. 09-51, at 5 (June 8, 2009), *available at* http://fjallfoss.fcc.gov/ecfs/document/view?id=6520220222 (". . . [T]he FCC should recognize the role that engaging, creative content can play in driving broadband demand. . . . Supporting the development of more high quality, educational content online will not only help children learn but can drive demand for broadband services by reminding parents of the educational benefits of this technology."); Comments of One Economy Corp., to the *Notice of Inquiry* in American Recovery and Reinvestment Act of 2009: A National Broadband Plan for Our Future, GN Dkt. No. 09-51, at 6 (June 8, 2009), *available at* http://fjallfoss.fcc.gov/ecfs/document/view?id=6520220204 ("prevalence of relevant content" will spur broadband adoption).

9. This term comes from CARNEGIE II, *supra* note 1, at 297.

10. *See generally* GROW THE AUDIENCE, *supra* note 6; AM. UNIV. SCH. OF COMMC'N CTR. FOR SOC. MEDIA, SCAN AND ANALYSIS OF BEST PRACTICES IN DIGITAL JOURNALISM BOTH WITHIN AND OUTSIDE U.S. PUBLIC BROADCASTING 15 (2009) [*hereinafter* BEST PRACTICES]; GUPTA CONSULTING, EMBRACING DIGITAL: A REVIEW

The central goal of the FCC's broadband initiative is a familiar one: to foster universally available and technically superior communications services that encourage public dialog and learning.[11] That goal depends on adequate telecommunications infrastructure, but infrastructure alone is not enough. Infrastructure is the "what." The "why" of universal, fast, and reliable broadband is to connect people to information that improves their lives and the lives of others—communication that is essential to performing the functions of democratic citizenship. Linking individuals and communities to relevant information—the "how" of broadband policy—requires robust, flexible, and innovative networks. It also requires entities and individuals to ***create*** moving narratives, accountability reporting,[12] and a safe space to engage publics respectfully in issues of relevance to them; to ***curate*** information in ways that make it accessible, understandable, and visible; and to ***connect*** individuals to each other, to community institutions, to information that they need, and to stories that inspire.

We think of these components of broadband content circulation—creation, curation, and connection—as linking the first mile of content production to the last mile of engagement. It was to achieve this connectivity that the public broadcasting system was created in a pre-broadband era. The FCC and Congress, instigated by private philanthropic foundations, assembled the system in the 1960s from scattered local stations that were providing educational programming.[13] In 1965, the independent Carnegie Commission called for a new system of "public television"[14] that would use noncommercial programming to "deepen a sense of community in local life[,] . . show us our community as it really is[,] . . bring into the home meetings . . . where people of the community express their hopes, their protests, their enthusiasms, and

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OF PUBLIC MEDIA EFFORTS ACROSS THE UNITED STATES (2009) [*hereinafter* EMBRACING DIGITAL]; FIRST ASPEN INST. ROUNDTABLE ON PUB. SERV. MEDIA, SUMMARY DOCUMENT FROM THE FIRST MEETING IN THE ASPEN ROUNDTABLE SERIES Feb. 1-3 (2009); *Digital Think In*, NPR, http://digitalthinkin.ning.com (last visited Nov. 15, 2010).

11. *See* A National Broadband Plan for Our Future, *Notice of Inquiry*, FCC 09-31, GN Dkt. No. 09-51, (2009) at ¶¶ 70, 88 [*hereinafter NOI*] (the Commission is designing "a plan for use of broadband infrastructure and services in advancing . . . civic participation, . . education") (*citing* Recovery Act §6001 (k)(2)(D)).

12. LEONARD DOWNIE, JR. & MICHAEL SCHUDSON, THE RECONSTRUCTION OF AMERICAN JOURNALISM 5 (2009) (discussing the increase of "accountability reporting" by newspapers that target those who hold power and influence over members of society, including businesses, educational institutions, and cultural institutions as well as government bodies).

13. CARNEGIE II, *supra* note 1, at 33-35.

14. CARNEGIE COMM'N ON EDUC. TELEVISION, PUBLIC TELEVISION, A PROGRAM FOR ACTION, REPORT AND RECOMMENDATIONS OF THE CARNEGIE COMMISSION ON EDUCATIONAL TELEVISION (1967) [hereinafter CARNEGIE I].

their will."[15] This system would indeed be a *system* of stations, focused on local life, but networked to provide national programming and to connect communities to the national project.[16] The Public Broadcasting Act of 1967 closely followed the Carnegie Commission's recommendations.[17]

Broadband technology now allows public service media to achieve the vision that, for the past 60 years, has been largely aspirational. The federal government has invested well over $10 billion in the public broadcasting system.[18] States have invested billions more. Today there is an opportunity to leverage that public investment in public service broadcasting to create public service broadband. This article identifies features of new public service media systems that would nurture the community connections, respectful dialog, trusted journalism, and educational narratives that public broadcasting has fostered even within the constraints of its technological and structural mandates.

To be sure, there have been powerful moments in the history of public broadcasting. In many instances, it went where no one else would: gavel-to-gavel coverage of the Watergate hearings; the creation of quality children's television; the pioneering development of science and documentary programming.[19] However, public broadcasting has not

15. *Id.* at 92-99.

16. *Id.* at 3 (finding that "a well-financed and well-directed educational television system, substantially larger and far more pervasive and effective than that which now exists in the United States, must be brought into being if the full needs of the American public are to be served").

17. Public Broadcasting Act of 1967, 47 U.S.C. § 396(a)(5) (2000) (providing that to further the general welfare, noncommercial television should be "responsive to the interests of people both in particular localities and throughout the United States, [and] which will constitute an expression of diversity and excellence . . .").

18. *Federal Appropriation History,* CORP. FOR PUB. BROAD., http://www.cpb.org/aboutcpb/financials/appropriation/history.html (last visited Nov. 13, 2010) (listing general appropriations amount, though not including appropriations for digital transition and interconnection capital); CPB Appropriations History 1969-2011 (on file with authors) (listing general appropriations, appropriations for digital transition, and for interconnection capital for a total of over $10 billion, and an average of $35.7 million per year (ranging from $25 to $50 million per year) appropriated for digital infrastructure since 2002); *see also Summary of Public Television's Legislative Requests*, APTS ACTION, INC., http://www.apts.org/legislative/appropriations (last visited Nov. 13, 2010) (listing approved funding to Corporation for Public Broadcasting (CPB) and CPB digital for 2008-2009 and funding requests for 2010).

19. *See* RICHARD SOMERSET-WARD, QUALITY TIME?: THE REPORT OF THE TWENTIETH CENTURY FUND TASK FORCE ON PUBLIC TELEVISION 24, 88, 125 (1993) [*hereinafter* QUALITY TIME?] (describing such high-quality science programming as the math series *Futures*, the Children's Television Workshop's science series, as well as PBS's "gavel-to-gavel" coverage of the Senate Watergate hearings); JOHN WITHERSPOON & ROSELLE KOVITZ, THE HISTORY OF PUBLIC BROADCASTING 68 (Robert K. Avery & Alan G. Stavitsky rev. eds., Educ. Broad. Corp. 1987) [*hereinafter* THE HISTORY OF PUBLIC BROADCASTING] (noting children's programming was a core mission since its earliest days, manifested in trusted television shows such as the *Friendly Giant* and the *Children's Corner* in

performed adequately in sponsoring and catalyzing local content creation. With some exceptions, local broadcasting entities have not maximally exploited their physical presence in hundreds of communities to engage and serve the interests of the public. Nor has the system adequately supported independently produced content or service to the underserved.

These deficiencies have many sources, and it is not the purpose of this article to detail or justify them. It suffices to say that however public broadcasting might have been structured and its practitioners motivated, broadcast technology could never have supported the lofty aspirations of 1967. As a capacity-constrained and one-way medium, broadcasting alone has never been capable of truly engaging diverse local populations while also networking effectively on a national level with a wide array of partners. The promise of public service media can come about only if public service media networks become open, inclusive, and mission-oriented confederations of content creators, curators, and connectors, working in collaboration with the public to circulate information, incubate innovation, and stimulate conversation.

Public service media should be understood to include noncommercial entities operating on and producing for broadcast, cable and satellite, Web-only, and mobile platforms. Sometimes public service media is produced by public broadcasters; sometimes by museums, libraries, and community groups; and sometimes by individual citizens. What public service media entities might be said to share is not membership in an organization or receipt of public funds (although this is common), but the principal mission of engaging publics with information that is relevant to improving lives as lived in particular communities and shared polities. To be clear, what is distinctive about this mission is that it eschews the agendas of profit-making, partisanship, and special interests, and focuses solely on the provision of information in as useful and balanced a form as possible.

Today, public service media entities are doing much with meager resources to exploit digital technology for mission-driven purposes. Section I illustrates these efforts, focusing on the ways in which these efforts depend upon and stimulate broadband use. The fact is, however, that most of public service media resources are tied up in a public broadcasting network that is structured for 20th century communications, both as a matter of law and practice. Changes in law are needed to free resources for the most effective broadband content, curation, and connection strategies in order to realize the ambitious goals

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the 1950s, and *Mister Rogers' Neighborhood* and *Sesame Street* a decade later); *see also infra* note 151 and accompanying discussion of pioneering documentary work.

of the broadband project. Changes in the way public service media is practiced are needed as well, and public policy should incentivize them. Section II outlines the public service media characteristics that would further what the Knight Commission has called healthy, "informed communities" in the digital age.[20]

The mission of public service media is to engage publics with information relevant to improving lives in particular communities and shared polities in ways that commercial media do not.[21] Defining public service media systems with reference to the following characteristics would support and strengthen this mission.

The first characteristic is *accessibility*. Public service media should be optimized to include as many voices, to make available as much information, and to engage as many people as possible, where and how they can best be engaged, with media and information that matters to them.

The second characteristic is *modularity*. Public service media should be structured so that noncommercial entities (such as broadcast stations, public access stations, independent producers, community media centers, museums and libraries) are able and encouraged to specialize in particular subject matter "verticals" (e.g., science, health, environment, labor), particular services (e.g., educational production, journalism, archiving, training), and particular technical competencies (e.g., applications, games, interfaces, platforms). These specialties can then be shared through digital networks over common platforms, and tailored for local needs.[22]

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20. KNIGHT COMM'N, *supra* note 6, at 2.

21. As the Corporation for Public Broadcasting put it:

> In brief, CPB's mission is to facilitate the development of, and ensure universal access to, noncommercial high-quality programming and telecommunication services. . . . The fundamental purpose of public service media is to provide programs and services that inform, enlighten, and enrich the public. CPB has particular responsibility to encourage the development of programming that involves creative risks and that addresses the needs of unserved and underserved audiences, particularly children and minorities.

CPB's Goals and Objectives, CORP. FOR PUB. BROAD., http://www.cpb.org/aboutcpb/goals/goalsandobjectives (last visited Nov. 13, 2010).

22. This model of vertical content centers, designed to provide content that can be customized for particular purposes and localities throughout the system, animates the new CPB sponsorship of Local Journalism Centers. *See, e.g.*, Comments of the Public Broadcasting Service, to the *Notice of Inquiry* in FCC Launches Examination of the Future of Media and Information Needs of Communities in a Digital Age, GN Dkt. No. 10-25, at 15 (May 7, 2010), *available at* http://fjallfoss.fcc.gov/ecfs/document/view?id=7020449911 (describing Local Journalism Centers as hubs specialized to provide multimedia coverage on topics of regional interest); Karen Everhart, *CPB to Aid 7 'Local Journalism Centers': About 50 New Employees Will Staff Stations' Specialized Regional Teams*, CURRENT (Apr. 5, 2010), http://www.current.org/news/news1006localcenters.shtml.

The third characteristic is *engagement*. Public service media systems should put engagement at the core, and develop content and curation strategies from the start to reach out to individuals, communities and, where desired, schools and other institutions. These strategies should engage people in information and narratives, provide tools for acting upon information, and finally, encourage members of the public to themselves contribute information and knowledge back through the networks.[23]

The fourth characteristic is *networked*. In addition to formal networks of national and local organizations, public service media systems should allow virtual networks to arise by using technological platforms and open standards that enable entities and individuals to share content and innovate with new content and applications. National Public Radio's API is an example of this kind of platform, which has allowed many different entities to use public radio content in new ways.[24] More robust and expansive platforms, supporting a broader array of content, would foster partnerships among different kinds of institutions, as well as ad hoc innovation based on access to public service media materials and tools.

The fifth characteristic is *diversity*. The public service media system should be intentionally constructed to include contributions from an ethnically, economically, ideologically, and geographically diverse population; to be a platform for diverse voices; and to focus especially on the needs of those with insufficient access to relevant information.

The sixth characteristic is *innovative*. Public service media systems should be hospitable to daring experiments in journalism, storytelling, information gathering and presentation, public engagement, trans-media learning, business models, metrics, and technology.

Finally, media systems should be *transparent*. They should be meaningfully open with respect to the flow of public resources, the process of reporting and story-creation, the criteria for publicly funded grants, the projects and partnerships undertaken, impact measurements, and diversity.

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23. Increasingly, public service media producers are being encouraged to build engagement strategies into the production of content, and to achieve best practices in the distribution of content flexibly through multiple platforms and collaborations. The National Center for Media Engagement, for example, is designed to provide leadership, guidance, and resources to help public media more effectively engage its community through new technologies and best practices. *See, e.g.*, *About Us*, NAT'L CTR. FOR MEDIA ENGAGEMENT, http://mediaengage.org/connect/about.cfm (last visited Nov. 13, 2010).

24. *API Overview*, NPR TECH CTR. (BETA), http://www.npr.org/api/index (last visited Nov. 13, 2010); *see also* Rekha, *New, Improved Public Radio Player Now Live in iTunes*, PUB. RADIO EXCHANGE BLOG (Mar. 2, 2010), http://blog.prx.org/2010/03/new-improved-public-radio-player-now- live-in-itunes (describing the use of NPR API as a source of station schedule data and on-demand programs).

Accessible, modular, engaging, networked, diverse, innovative and transparent: AMEND-IT. In comments to the FCC, we called for amendments to the Public Broadcasting Act to effectuate these goals.[25] Below, we include a modified version of that legislative proposal. We were encouraged to see that in its National Broadband Plan, the FCC acted on our request to acknowledge the role of enhanced digital public service media networks in the broadband future.[26] Specifically, the Plan recognized that "public media will play a critical role in the development of a healthy and thriving media ecosystem," identifying its "vital and unique role in our democracy" by informing individuals, leading public conversation, and building cohesion and participation in communities.[27] It recommended that Congress consider increasing funding to public media for broadband-based distribution and content.[28] It also recommended that a portion of broadcast spectrum auction proceeds be used to create a fund for public service media.[29] Further steps will be needed at both the FCC and in Congress to move public service media systems forward to meet 21st century needs.

I. EMERGENT DIGITAL PUBLIC SERVICE MEDIA PRACTICES: MAKING BROADBAND SERVE PUBLIC PURPOSES

The FCC produced a National Broadband Plan in response to Congress's instruction that it consider how broadband infrastructure could be used to advance *"a broad array of public interest goals, including consumer welfare, civic participation, public safety and homeland security, community development, health care delivery, energy independence and efficiency, education, worker training, private sector investment, entrepreneurial activity, job creation and economic growth, and other national purposes."*[30] The resulting Broadband Plan, in its vision and its particulars, recognizes that broadband infrastructure alone will not fulfill the enumerated national public purposes and other essential public welfare goals.[31] Commercial interests and individual creativity alone will not supply the content, community connections, and access to information to

25. *See* Public Broadcasting Act of 1967, 47 U.S.C. § 396 (2000).
26. Goodman & Chen Comments, *supra* note 4, at 29-30.
27. THE NATIONAL BROADBAND PLAN, *supra* note 2, at 303.
28. *Id.* at 303-304.
29. *Id.* at 304.
30. *NOI*, *supra* note 11, at ¶9.
31. THE NATIONAL BROADBAND PLAN, *supra* note 2, at 303-305 (discussing the value of systems such as public media—and not just broadband connectivity or access—to accomplish democratic goals of government accountability, civic engagement, and citizen participation in government processes and decision-making).

maximize the utility of broadband infrastructure for the public good.[32]

As the Carnegie Commission found in 1979, in addressing the possibilities for a more robust system of "public telecommunications":

> [T]he non-profit sector – in education, public service, and the arts – has a different bottom line from the business community. In an ultimate sense, its contributions to human betterment constitute its 'profit.' This is a unique form of social dividend that Western society has devised as a counterweight to the implacable economic laws of the marketplace.[33]

A system of digital public service media—or more accurately, cooperative *systems* of public service media—can deploy broadband content to forge connected communities. From the start, the Public Broadcasting Act recognized that the value of "public telecommunications services" was not limited to broadcast technologies.[34] It recognized the potential of such services to "constitute valuable local community resources for utilizing electronic media to address national concerns and solve local problems through community programs and outreach programs."[35] This vision was particularly far-reaching, considering the fact that broadcast technology of the 1960s was not well suited to meet these goals. Broadband technology, on the other hand, if combined with the creative and community assets of existing and new public service media entities, really can.

A. Functions: How Public Service Media Can "Address National Concerns and Solve Local Problems"

We have identified three core functions of digital public service

32. *See supra* citations accompanying note 7; PERSEPHONE MIEL & ROBERT FARIS, NEWS & INFORMATION AS DIGITAL MEDIA COMES OF AGE 1, 42 (2008) (describing how newspapers are reducing and shifting the scope of their original reporting, leaving a gap for more costly, less commercially viable sectors such as international news and specialized subject areas—one that participatory media entities are neither designed nor able to fill); PAT AUFDERHEIDE & JESSICA CLARK, PUBLIC BROADCASTING & PUBLIC AFFAIRS: OPPORTUNITIES AND CHALLENGES FOR PUBLIC BROADCASTING'S ROLE IN PROVISIONING THE PUBLIC WITH NEWS AND PUBLIC AFFAIRS (2008) (describing the fragmentation of the commercial media marketplace and public service media's potential to play a role for the future nonprofit media sector); *see also* Howard A. White, *Fine Tuning the Federal Government's Role in Public Broadcasting*, 46 FED. COMM. L.J. 491, 495 (1994) (describing the historical need for programming in such areas as classical music, instructional programming, and local cultural or community events as a meaningful alternative to the "entertaining, but generally uninspiring," programs offered by commercial stations or networks).

33. CARNEGIE II, *supra* note 1, at 297.

34. Public Broadcasting Act of 1967, 47 U.S.C. § 396(a)(2) (2000).

35. *Id.* at § 396 (a)(8).

media based on the directives of the Public Broadcasting Act and research on best practices in the field. These functions are (1) to create content—particularly in the form of journalism, documentaries, educational content, and service to the rural and poor—that markets will not and that is important to individual and social flourishing;[36] (2) to curate content, serving to make available content that the public cannot easily access and to highlight content that might otherwise get lost; and (3) to connect individuals to information and to each other in service of important public purposes.

1. Create

Public service media should create content where there are market failures and in accordance with a public service objective.[37] Public service media contributions are especially needed in the areas of enterprise journalism (particularly at the local level), educational content, and content that illuminates issues of particular relevance to minority and underserved audiences.[38] The following successful recent projects and

36. Educational literature acknowledges the value of narratives in enhancing learning and enriching educational models. *See, e.g.*, David Parker, *Moving Image, Media, Print Literacy and Narrative*, BFI, http://www.bfi.org.uk/education/research/teachlearn/nate.html (last updated Mar. 22, 2010) (discussing how narrative has long been a tool in education, particularly that of children); Bradford W. Mott et al., *Towards Narrative-Centered Learning Environments*, *in* NARRATIVE INTELLIGENCE: PAPERS FROM THE 1999 AAAI FALL SYMPOSIUM 78-82 (M. Mateas & P. Sengers, eds., 1999); Martin J. Weller, *The Use of Narrative to Provide a Cohesive Structure for a Web Based Computing Course*, J. INTERACTIVE MEDIA IN EDUC. (2000).

37. *See* LEONARD DOWNIE, JR. & MICHAEL SCHUDSON, THE RECONSTRUCTION OF AMERICAN JOURNALISM 14-25 (2009) (detailing the different kinds of journalism that the market fails to support); DEPT. FOR BUS. INNOVATION & SKILLS, DIGITAL BRITAIN FINAL REPORT 146-47 (2009) (discussing market failure in children's programming in Britain); *Annex 11: Market Failure in Broadcasting*, *in* THE DIGITAL OPPORTUNITY: OFCOM'S SECOND PUBLIC SERVICE BROADCASTING REVIEW (2008) (examining market failure in broadcasting with reference to the broader social value of media and communications services); Jonathan M. Phillips, *Freedom By Design: Objective Analysis and the Constitutional Status of Public Broadcasting*, 155 U. PENN. L. REV. 991, 995-96 (2007) ("Myriad justifications for public service broadcasting orbit the universe of media theory, but they all largely revolve around the idea of market failure," where market pressures drive commercial media to under-produce content thought valuable to society); Ellen P. Goodman, *Media Policy Out of the Box: Content Abundance, Attention Scarcity, and the Failures of Digital Markets*, 19 BERKELEY TECH. L.J. 1389, 1415-19 (2004) [*hereinafter Media Policy Out of the Box*] (discussing market failure theory of public service media); Monroe E. Price, *Public Broadcasting and the Crisis of Corporate Governance*, 17 CARDOZO ARTS & ENT. L.J. 417, 427 (1999) (describing rationales behind public television, including market failure).

38. Indeed, a core function of public service media has long been to reach these underserved segments. 47 U.S.C. § 396(a)(6) (citing as a policy goal to serve "unserved and underserved" audiences); QUALITY TIME?, *supra* note 19, at 22 (stating that an inherent component of the mission of public television is "its role as an alternative to commercial television, which is driven by concern for the marketplace, and therefore fails to capture many of the values we hold dear," and that "[p]ublic broadcasting has deep roots in education."); THE HISTORY OF PUBLIC BROADCASTING, *supra* note 19, at 3, 69 ("Public broadcasting's

promising future initiatives demonstrate what public service media entities can generate when acting in the public interest. All depend on broadband connectivity, while many would be dramatically better with better broadband.

Local Enterprise Journalism. The Argo Network, a pilot project of National Public Radio (NPR) funded by the Knight Foundation and the Corporation for Public Broadcasting (CPB), is designed to increase local reporting capacity among public broadcasting stations by creating, curating, and distributing Web-original content and original reporting in specialized, under-developed subject areas such as environmental policy, rural economic diversification, and public health. Content of both local and national interest is built on a common platform that allows each participant group to easily access other groups' work. The front-end platform is also designed to offer Web. 2.0 services, including blogging, search and aggregation, and social media tools.[39]

Analysis. Chicago Public Radio developed plain-spoken coverage of the recent economic crisis on *This American Life*, which later spun off into NPR's *Planet Money*, a multimedia team covering the global economy. The output includes a high-quality podcast, Twitter feeds, a Facebook group, and a discussion-centric blog where members of the public are encouraged to comment and offer their own feedback.[40]

Education. The Teacher's Domain is a free collection of over 2,000 standards-based digital resources covering a wide range of content for students and teachers.[41] Developed by the Boston public station WGBH and drawing from trusted sources such as *NOVA* and *A Science Odyssey*, Teacher's Domain offers a multimedia mix of video, audio, Flash Interactive images, articles, lesson plans, and student-oriented activities for the more than 333,000 registered users in over 177 countries worldwide. Specialized content includes online professional development courses on how to use science-related media for K-12 science teachers,

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programming mission traditionally has centered on alternative programming: programs which probably could not survive in the ratings-oriented commercial system, but which are perceived to be of value to particular audiences. . . . including programs for minorities; targeted groups, such as the elderly and children; and the handicapped."); Susan D. Charkes, *Editorial Discretion of State Public Broadcasting Licenses*, 82 COLUM. L. REV. 1161, 1165 (1982) (citing H.R. Rep. No. 572, at 10-11 (1967), *reprinted in* 1967 U.S.C.C.A.N 1799, 1801).

39. *About the Argo Network*, NPR (July 26, 2010) http://www.npr.org/templates/story/story.php?storyId=128777262; Laura McGann, *NPR's Argo Project Becomes the Argo Network, Mixing the Local and the National on Reported Blogs*, NIEMAN JOURNALISM LAB (Aug. 25, 2010, 12:45PM ET), http://www.niemanlab.org/2010/08/nprs-argo-project-becomes-the-argo-network-mixing-the-local-and-the-national-on-reported-blogs.

40. BEST PRACTICES, *supra* note 10, at 15.

41. Comments of the Ass'n of Pub. Television Stations, to the *Notice of Inquiry* in A Nat'l Broadband Plan for Our Future, GN Dkt. No. 09-51, at 2-3 (July 21, 2009), *available at* http://fjallfoss.fcc.gov/ecfs/comment/view?id=6015070069.

and an adolescent literacy media resource collection.[42]

Bridging the Information Divide. One Economy Corporation's Public Internet Channel is another example of a non-commercial, mission-driven project. It focuses on serving low-income users by combining video series about topics such as economics and family life with interactive resources. The Channel's Web pages, for example, display a "toolbox" of options for learning, such as links to other articles and relevant information resources.[43] Its tutorial in everyday economics links to internal articles explaining how to file taxes online, how to properly write checks, and additional resources for understanding 401(k) plans.

2. Curate

As the amount of media content proliferates, trusted public service media entities have an important role to play as information curators. They can use their brands, community connections, technology, and editorial capacities to raise the profile of important, reliable, and innovative content.[44] They also can play a vital and currently unserved function of maintaining public archives of historically important audio and video. Such an archive, which would make vast quantities of digital information searchable and available for the public to use, could serve as an electronic public park.[45] Some of the most interesting curatorial efforts are illustrated by the following examples:

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42. PBS Education has also been working on the Digital Learning Library ("DLL"), an initiative to make available a library of "purpose-built" digital learning objects (currently nearing 10,000 and growing) to every station. PBS DIGITAL LEARNING LIBRARY, http://www.pbsdigitallearninglibrary.org (last visited Oct. 23, 2010); *Introducing the PBS Digital Learning Library*, PBS TEACHERS, http://www.pbs.org/teachers/dll/ (last visited Oct. 23, 2010); Seven leading local stations will begin testing the Library in September 2010, with a focus on the teacher's experience and value of digital media in instruction. E-mail from Rob Lippincott, PBS, to Ellen P. Goodman (Aug. 30, 2010, 14:58 EDT) (on file with author).

43. BEST PRACTICES, *supra* note 10, at 23.

44. JAMES BARKSDALE & REED HUNDT, THE DIGITAL FUTURE INITIATIVE PANEL, FINAL REPORT: CHALLENGES AND OPPORTUNITIES FOR PUBLIC SERVICE MEDIA IN THE DIGITAL AGE 45 (2005) [*hereinafter* THE DIGITAL FUTURE INITIATIVE PANEL].

45. Public service media leaders have recently testified to the need for such an archive:

> Highly-trusted content of enormous value is languishing on the shelves of public television and radio stations. Billions of dollars worth of content assets, largely purchased with public money, are effectively lost to educators, inventors, government officials and private citizens because they have not been indexed and stored on accessible digital media. Worse still, some of these assets are in real danger of physical loss through disintegration and obsolescence.

Letter from Patricia Harrison, President & CEO, Corp. Pub. Broad., Paula Kerger, President & CEO, Pub. Broad. Serv., & Dennis Haarsager, Interim President & CEO, Nat'l Pub. Radio, to President-Elect Barack Obama (Jan. 2, 2009) [hereinafter Public Broadcasting Stimulus Letter] (public broadcasting stimulus request), *available at* http://www.current.org/pbpb/documents/stimulus-request-Jan09.pdf.

Open Platforms for Submitting and Vetting Content. Public Radio Exchange (PRX) curates independently produced radio content.[46] It now has more than 20,000 radio programs and approximately 1,000 producers available on the website, and also hosts a social network to connect young radio producers and teachers. The platform give public radio stations a much broader array of content and voices to choose from when programming their airtime, and it takes care of all the licensing and back-end business. Users can participate as well by writing reviews, creating playlists, and offering feedback to public radio station producers.[47]

Aggregation of Content for Underserved Populations. New America Media (NAM) is a nationwide association of over 700 ethnic media associations that heavily relies on a networking component to curate high-quality content and reach diverse audiences.[48] It makes the content of individual outlets more accessible to general audiences, and serves as a portal by which outlets and users can connect across shared concerns. It curates and organizes multimedia content by ethnicity, by particular news beats, and by age, with a special YO! Youth Outlook project for youth media content with a strong new media focus.[49]

Subject Matter Specialization. Yale Environment 360 is a new media resource that provides in-depth knowledge and curates content about the environment.[50] It fills an increasingly large gap in the area of environmental reporting, attracting young journalists, experienced reporters, and a mix of policymakers and academics to create high-quality content on its site.

Crowdsourcing Research. ProPublica, a nonprofit news venture that produces investigative journalism on under-covered political stories, recently launched an award-winning new "distributed reporting" initiative that partners with other grassroots and news organizations to collect intelligence on stories and generate story leads.[51]

3. Connect

The Public Broadcasting Act specifically charged public service media entities with the task of reaching out to the public and engaging

46. KNIGHT COMM'N, *supra* note 6, at 51; PUBLIC MEDIA 2.0, *supra* note 6, at 14; Josh Silver, *Public Media's Moment*, *in* CHANGING MEDIA: PUBLIC INTEREST POLICIES FOR THE DIGITAL AGE 257, 276 (2009).

47. *See* Silver, *supra* note 46, at 276.

48. NEW AMERICA MEDIA, http://newamericamedia.org (last visited Oct. 23, 2010); BEST PRACTICES, *supra* note 10, at 24.

49. BEST PRACTICES, *supra* note 10, at 24.

50. *Id.* at 20-21.

51. PROPUBLICA REPORTING NETWORK, http://www.propublica.org/ion/reporting-network (last visited Sept. 5, 2010); *see also* PUBLIC MEDIA 2.0, *supra* note 6, at 40.

people with media content and information.[52] Traditional methods of doing this have included producing teaching guides and other ancillary program-related material, as well as convening community events.[53] Public service media entities can now engage individuals and communities more vigorously across many platforms in the production, discussion, and use of media content. Broadband technology can connect expression to action; citizens to each other and to information; and local communities to national and global ones. Some promising new efforts include social networking sites, interactive games, maps, and community partnerships.

Social Media and Networking Tools are helping public service media entities connect with the public. Individual reporters are using Twitter for on-the-scene coverage, tag-based aggregation of links and commentary, and crowd-sourced reporting.[54] NPR participated in Twitter Vote Report and Inauguration '09, two innovative experiments that used Twitter to engage users in the election.[55] WNYC's You Produce Wiki program asks listeners through a wiki module to contribute story ideas, suggest guests, and identify fresh angles for their stories.[56] And Frontline—the well-respected PBS documentary series—is using Twitter to allow users to follow reporters as they develop and research stories in several subject-matter areas so that the creation of hour-long documentaries is more transparent and users get the benefits of the reporting that ends up on the cutting-room floor.[57]

Games help connect the public service media entities with the public. The Independent Television Service ("ITVS") has produced a series of issues-oriented games, such as World Without Oil, where nearly 2,000 gamers from over 40 countries used new media tools to simulate a response to a sustained energy crisis, and FatWorld, an online video game about the relationship between American obesity, nutrition, and socioeconomics.[58] In Games for Change, media makers promote new kinds of games that engage contemporary social issues such as

52. 47 U.S.C. § 396(a)(8) (2010) (declaring that public telecommunications services are valuable community resources for addressing national concerns and solving local problems through community and outreach programs).

53. *See, e.g.*, *Media Policy Out of the Box*, *supra* note 37, at 1469-71 (listing examples of public service media initiatives that reach out to schools, libraries, museums, and the workplace to engage a wider audience).

54. BEST PRACTICES, *supra* note 10, at 36.

55. *Id.* at 37.

56. Silver, *supra* note 46, at 278.

57. Megan Garber, *Frontline Looks to Expand Its Docs into a Continual Conversation,* NIEMAN JOURNALISM LAB (Nov. 17, 2010, 2:30PM ET), http://www.niemanlab.org/2010/11/the-neverending-broadcast-frontline-looks-to-expand-its-docs-into-a-continual-conversation.

58. *Id.*

poverty, human rights, global conflict, and climate change.[59] It also serves as a knowledge base and resource hub to help organizations network and develop video game projects.

Maps are another way of connecting the public and public service media content. Online and mobile maps and visualizations can also serve a variety of reporting and educational functions. KCET Departures designs its educational curriculum so that a map is the central point for learning, where students become "narrative cartographers" by mapping out their local community and embedding pictures, stories, and multimedia with the platform itself.[60] WNYC's *Are You Being Gouged?* asked users to report prices of milk, beer, and lettuce onto a crowdsourced map.[61] In covering the economic crisis, WNYC also asked listeners to report stories of Uncommon Economic Indicators, which were then visually mapped by location.[62]

Mashups help the public to engage more deeply with public service media content. Tools that allow users to remix video, audio, and text enable public service media to encourage user participation and create content in fresh ways. ITVS's Filmocracy competition, for example, invited users to employ an EyeSpot online editing tool to create their own mash-ups of publicly available photographs, film footage, and video clips.[63]

Micro-Storytelling Kiosks. A documentary project developed by the Bay Area Video Coalition and journalist Pete Nicks on Highland Hospital in Oakland involves kiosks set up in hospital waiting rooms across the country to capture and archive many diverse stories connected to the health care crisis.[64] The independent nonprofit StoryCorps also uses booths and kiosks to draw out the oral histories of thousands, many of which are then broadcast on public radio and the Internet.[65] CPB's Public Broadcasting in Public Places, a digital initiative to bring prime-time national PBS programming to new audiences, uses interactive digital kiosks as well. For example, these kiosks in California featured edited clips from PBS's California and American Dream Series.[66]

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59. GAMES FOR CHANGE, http://www.gamesforchange.org/ (last visited Oct. 23, 2010).

60. Amanda Hirsch, *KCET's 'Departures' Exemplifies Community Collaboration*, PBS MEDIASHIFT (Aug. 24, 2010), http://www.pbs.org/mediashift/2010/08/-kcets-departures-exemplifies-community-collaboration236.html.

61. BEST PRACTICES, *supra* note 10, at 37.

62. Silver, *supra* note 46, at 278.

63. *Id.*

64. Wendy Levy, *What R U Waiting For?*, BAY AREA VIDEO COALITION (July 14, 2009), http://www.bavc.org/index.php?option=com_content&task=view&id=1801&Itemid=1740.

65. STORYCORPS, http://storycorps.org/your-community (last visited Oct. 23, 2010).

66. *California and the American Dream*, CORP. FOR PUB. BROAD., http://www.californiadreamseries.org/pbipp.htm (last visited Oct. 23, 2010).

Higher Education Collaborations. KCET Web Stories is a set of online videos and narratives that examines and partners with communities in Los Angeles. KCET worked with students from Occidental College to produce a story on the community of Eagle Rock.[67] It is currently building a curriculum for schools and colleges in those communities to educate students about the culture, individual lives, and history of their own neighborhoods. The station will then showcase the students' work product on its website.

Institutional Partnerships. Public service media entities increasingly design documentary films in order to stimulate dialog and connections among interested publics.[68] For example, the film *Lioness*, which appeared on the ITVS television series *Independent Lens*, probed the role of women in the military and was screened at military bases, community centers, and veterans service organizations.[69]

Community Partnerships. In the San Francisco Bay Area, KQED *Quest* uses its website as a multimedia hub to integrate its radio, TV, and online coverage of the community, featuring regional maps, a community blog, partnerships and activities with local libraries, museums, universities, journalism schools, and at least 25 other news outlets.[70] Unique features include an interactive map with GPS technology identifying locations where *Quest* segments were recorded; online nature hikes and walks; continuous coverage of climate-related news; a community science blog with contributions from scientists, educators, and students; and discussion and photo sharing tools.[71] Philadelphia's WHYY broadcast station also partnered with the *Philadelphia Daily News* to produce a multimedia civic engagement blog, *It's Our City*, which solicits essays from users on topics related to city issues and leadership.[72]

State Partnerships. Workforce Learning Link is an educational initiative between the New Jersey Network and the New Jersey Department of Labor and Workforce Development.[73] It uses digital television technology, streaming video, computer software, and online and print materials to provide customized, interactive training services

67. EMBRACING DIGITAL, *supra* note 10, at 21.

68. BEST PRACTICES, *supra* note 10, at 29.

69. PUBLIC MEDIA 2.0, *supra* note 6, at 20; EMBRACING DIGITAL, *supra* note 10, at 21.

70. BEST PRACTICES, *supra* note 10, at 29-30.

71. Katie Donnelly, *While Others Shrink, KQED Expands Cross-Platform News*, PBS MEDIASHIFT (Aug. 25, 2010), http://www.pbs.org/mediashift/2010/08/while-others-shrink-kqed-expands-cross-platform-news237.html; Comments of the Ass'n of Pub. Television Stations, *supra* note 41, at 4-5.

72. *It's Our City*, WHYY, http://whyy.org/blogs/itsourcity/ (last visited Oct. 23, 2010).

73. Comments of the Ass'n of Pub. Television Stations, *supra* note 41, at 9.

and educational opportunities for welfare registrants, dislocated workers, and other job seekers.

Social Change Partnerships. Saving the Sierra: Voices of Conservation in Action documented what citizens were doing to preserve the Sierra Nevada Mountains.[74] Starting first with community outreach, the project invited local community organizations in the Sierra Nevada area to participate. The result was a multimedia website, which offered online Web stories and news from local residents and groups engaged in conservation, and later a National Public Radio documentary. With its mission to "put a human face on public policy," Active Voice is an organization that uses film, television, and multimedia to highlight and humanize social issues such as immigration, criminal justice, health care, and sustainability. It works with media makers, funders, advocates, and thought leaders to develop key messages, repurpose digital content for distribution, and produce ancillary and educational resources through national and local partnerships.[75]

Community Media Centers. channelAustin is an example of a non-commercial, community-based digital media center.[76] It provides access to open source Web tools, computer labs, Web streaming and digital cable distribution, and networked content management in order to target youth in after-school programs, neighborhood organizations, and non-profits for training.[77] It aims to be a regional hub for digital community media, connecting underdeveloped areas to cultural and economic opportunities in the rest of the city.[78]

B. Structure: Designing Systems of Digital Public Service Media for the 21st Century

We could fill this paper with many more examples like those above, but could cite to even more projects never launched because public service media structures could not support them or broadband capabilities could not sustain them. The examples included, and the ones not included, say something about public service media's potential to

74. Jesikah Maria Ross & Catherine Stifter, *Collaboration in Action: Strategies for Developing and Distributing Multiplatform Documentaries*, AM. U. SCH. OF COMM. CTR. FOR SOC. MEDIA, http://www.centerforsocialmedia.org/making-your-media-matter/documents/case-studies/collaboration-action-strategies-developing-and-distr (last visited Oct. 23, 2010).

75. ACTIVE VOICE, http://activevoice.net/ (last visited Oct. 23, 2010).

76. MARTHA FUENTES-BAUTISTA, BEYOND TELEVISION: THE DIGITAL TRANSITION OF PUBLIC ACCESS 1-2 (2009) (providing an in-depth examination of channelAustin as a case study for noncommercial digital community media centers) [*hereinafter* BEYOND TELEVISION].

77. *Id.* at 12-14.

78. *Id.* at 24.

contribute to civic engagement and informed communities using broadband and other technologies. Even more importantly, however, they point to lost opportunities and latent capacities. Highly localized or niche experiments are not good enough. This country could have much better systems of public service media and much more powerful contributions to public life if there were reforms within the legacy public broadcasting structure and integration of the legacy system with non-broadcast public service media entities. For this to happen, the Public Broadcasting Act must be amended—a point covered in the next section. Just as importantly, the practices of noncommercial media entities and the incentives created by their funders must change.

What would a fully realized system of digital public service media look like? What structures would best support the functions of creating, curating, and connecting for an increasingly diverse population? What structures would generate commercially unviable content that is composed of "the reverent and the rude, the disciplined and the rambunctious – a celebration of American freedom in all its unpredictable varieties"?[79] What structures would allow us to "grasp the means to broaden our conversation to include the diverse interests of the entire society, in ways that both illuminate our differences and distill our mutual hopes. . . [?]"[80]

Based on our review of best practices in the field, we believe that the following characteristics are desirable in any future set of digital public service media networks in order to realize the goals of the Act in the digital context—to AMEND-IT so that the law aligns with today's technological capabilities and needs.

1. Accessible

The Public Broadcasting Act envisioned a universally available service that met the needs of the entire population to engage with information.[81] Making this ideal of public access and public service operational requires a degree of collaboration and openness that is uncommon among public service media entities today. The public must be able to easily access content created with a public service mission, especially burgeoning noncommercial journalism efforts. Likewise, those creating such content must be able to easily access the public. Moreover, meaningful access means that public service media must be available to all over all widely used communications platforms, particularly mobile

79. CARNEGIE II, *supra* note 1, at 300.

80. *Id.*

81. 47 U.S.C. § 396(a)(9) (2009) (declaring it in the public interest for the government to ensure that "all citizens of the United States have access to public telecommunications services").

devices.

There are some promising beginnings of collaboration both among public broadcasters themselves and between broadcasters and other public service media entities (e.g., cable access stations or local journalism non-profits).

Station Collaborations. In Cleveland, WVIZ and WCPN (the city's PBS and NPR stations) jointly created ideastream, a public service multiple media organization that brings together different educational and public service media programs to better serve the Cleveland community.[82] It now includes local public radio and television channels, educational and public service cable channels, broadband interactive video distance learning, and Internet-only sources.

Public-Private Hybrids. The Bay Area Video Coalition Producer's Institute pairs independent and public service media makers with commercial Web tools to help them engage public participation by working with digital media.[83] For example, in *iWitness*, an online project of the PBS series *Frontline/World*, BAVC trainers worked with producers to build tools for citizen journalism by combining webcams with Skype. The project resulted in unique pieces on the Johannesburg riots.[84]

Community Media Partnerships. Denver's Open Media Project is a collaborative initiative that connects six public access facilities to implement open source and Web-based tools for public access producers and staff.[85] It has helped other community media groups like channelAustin to develop an open source video content management system that allows users to conduct most of their transactions through the Web.

Involving New Networks of Users and Makers. The Public Broadcasting Act envisioned that public service media would amplify voices seldom heard through commercial media.[86] Today, the possibilities for inclusion are greater than ever. Public service media can, as *The Public Insight Journal Network* (a partnership between American Public Media and Gather) has, create networks of individuals willing to serve as expert sources about particular trends in their cohorts and

82. *ideastream*, http://www.ideastream.org/ideastream/about/about_ideastream (last visited Nov. 28, 2010).

83. PUBLIC MEDIA 2.0, *supra* note 6, at 26.

84. *Id.*

85. BEYOND TELEVISION, *supra* note 76, at 13.

86. 47 U.S.C. § 396(a)(6) (2000) (declaring it in the public interest to encourage the development of programming specifically for the needs of unserved and underserved audiences, and especially children and minorities); *see also supra* text accompanying note 38 (describing the drive to reach underserved audiences as a core component of public service media).

communities.[87] In San Francisco, KQED has been able to open access to many new voices by inviting community partners and individuals, for a $35 fee, to write and podcast content for the station's blog in arts, science, and food.[88] Native American Public Telecommunications also uses podcasts on AIROS, its Native radio station, to feature new voices in Native American media. The podcasts recently surpassed a quarter million (250,000) audio downloads.[89]

Public service media was meant to provide access to news and information that the market does not support.[90] As several reports have recently noted, there are increasing and worrisome market failures in the production of investigative journalism.[91] Thus, public service media must be part of the solution, not only by increasing journalistic resources, but also by linking established media entities with new entrants to maximize the impact of journalistic efforts. The challenges of sustaining local journalism are formidable. As William Kling, President and CEO of Minnesota Public Radio, has put it, public broadcasting stations can serve as "base camps" for collaborative journalistic efforts.[92] One does not climb Mount Everest without the aid of base camps to assist in the ascent, and one usually cannot create sustainable journalistic organizations without a base level of infrastructure.[93]

Public broadcasting stations and some public access cable facilities can offer basic support for local journalism by providing space, administrative support, and business experience. This use of legacy public broadcasting is happening in a few places, such as St. Louis. The city's public radio station, KETC, has adopted several online initiatives with local online news and radio services, sharing content and expertise.[94]

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87. EMBRACING DIGITAL, *supra* note 10, at 27.

88. *Id.* at 25.

89. *Podcast Page*, Native American Public Telecommunications, http://www.airos.org/podcasts_page#producer (last visited Nov. 28, 2010).

90. *See supra* text accompanying notes 37 & 38 (describing the market failure of certain types of content covered by public service media, and the role of public service media in offering alternative programming that would otherwise not be commercially viable or available).

91. *See supra* note 7 (citing several reports describing the current failure of a sustainable model for investigative journalism, and the growing public need for new business models and funders in that area).

92. Interview by Ellen P. Goodman with William Kling, President and CEO, Minn. Pub. Radio (Sept. 30, 2009).

93. WILLIAM H. KLING, IN SERVICE OF DEMOCRACY: ACHIEVING PUBLIC RADIO AND PUBLIC MEDIA'S POTENTIAL 3 (2010) (emphasizing the need for greater capacity in order to sustain high-quality journalism, especially in a local market); Jill Drew, *NPR Amps Up: Can Vivian Schiller Build a Journalism Juggernaut,* COLUM. JOURNALISM REV., Mar.-Apr. 2010, http://www.cjr.org/feature/npr_amps_up.php?page=6 (describing the lack of funding local public radio stations need in order to fill gaps created by failing local newspapers).

94. Ellen P. Goodman & Anne H. Chen, A PBS 21ST CENTURY PLANNING INITIATIVE: TRANSFORMING NEWS & PUBLIC AFFAIRS ON PUBLIC MEDIA 15

When out-of-work local reporters received a grant to launch an online news service, the *St. Louis Beacon*, KETC provided rent-free office space and other resources.[95] In the San Francisco Bay Area, KQED and the University of California, Berkeley concluded that because "market mechanisms alone can no longer be relied upon to produce the quality journalism the Bay Area needs . . . public support must and will become a critical part of the solution."[96] As a result, the two institutions have formed The Bay Citizen, a nonprofit, nonpartisan initiative to support high-quality, original, and local journalism about civic and community news in the Bay Area.[97] The Bay Citizen has since partnered with *The New York Times* to provide news for the *Times's* local San Francisco editions on Fridays and Saturdays, and recently launched its own website.[98] It plans to distribute news through podcasts, radio, and potentially television as well.[99]

The Public Broadcasting Act envisioned something beyond broadcasting as a platform even in 1967. The term it used was "public telecommunications."[100] Public service media ought to be everywhere that the public is seeking media content. A popular iPhone application, Public Radio Player, takes an important step in this direction by offering a program guide, content streams from hundreds of public radio stations, a user support blog, and a locating feature that tunes in to public radio stations based on the phone location.[101] The Public Radio Player now has over 1.5 million user downloads.

2. Modular

There are many problems for which broadband-enabled public service media could be part of the solution. Among them are: the need for more local accountability journalism; better educational materials and engagement models; public service mobile communications; the development of youth and minority voices; and the circulation of knowledge in the areas of science, technology, health, and the economy.

(forthcoming) (on file with authors).

95. *Id.*

96. *About Us FAQ*, THE BAY CITIZEN, http://www.bayareanewsproject.org/faq (last visited Nov. 28, 2010).

97. *Id.*

98. THE BAY CITIZEN, http://www.baycitizen.org (last visited Nov. 28, 2010); Leena Rao, *Bay Area News Project Strikes Content Deal With The New York Times*, TECH CRUNCH (Jan. 21, 2010), http://techcrunch.com/2010/01/21/bay-area-news-project-strikes-content-deal-with-the-new-york-times.

99. *Our History*, THE BAY CITIZEN, http://www.baycitizen.org/about/history (last visited Nov. 28, 2010).

100. Public Broadcasting Act of 1967, 47 U.S.C. § 396(a) (2000).

101. EMBRACING DIGITAL, *supra* note 10, at 29.

Indeed, effective responses to these problems *require* public service media participation in the sense that they depend on the intentional facilitation of communications about causes and solutions among those who suffer and those who can solve.

Not all public service media entities should try to tackle every problem. The public broadcasting system, as originally conceived, embodied a system that was modular only with respect to national and local functions. The system consisted of local stations and national organizations, networked together to realize economies of scale on national programming while encouraging local service.[102] All local entities in this system were supposed to operate largely autonomously with the same functional obligations. In other words, each station managed infrastructure, each produced (or was supposed to produce) general interest programming for its community, and each was charged with becoming expert in the vertical areas of public broadcast focus (education, news, and culture). The realities of a mid-20th century mass audience and the technologies to serve them required this approach. Today's technical capabilities and economic realities argue for increased modularity and specialization not only in the national/local dimension, but also in at least three other ways.

First, there can be specialization by ***content***. Some noncommercial broadcast stations and other public service media entities are developing specialties in content verticals, such as health and the environment.

To take health care issues as an example, a number of public broadcasting stations are deepening coverage of these issues and engaging publics with the information, usually in partnership with health care providers and advocates. Some of these efforts were documented in comments to the FCC's National Broadband Plan.[103] They include: *Be Well Kentucky* (television series, online outreach, and collaborative health literacy workshops for children, families, and minorities in partnership with community groups);[104] *LiveFIT NH* (similar combination of programs around childhood obesity);[105] the *Emergency and Community Health Outreach* program in St. Paul, Minnesota (similar combination of programs on public health topics such as flu prevention, translated into Spanish, Hmong, Khmer, Lao, Vietnamese, Somali).[106] Six years ago,

102. § 396(a)(3), (5), (8) (describing public telecommunications on distinctively "local and national levels" designed to address both "national concerns and local problems," yet focusing on the interests of those in "particular localities"); *see also* CARNEGIE I, *supra* note 14 (discussing the institutional landscape of public broadcasting in terms of a modular local and national approach).

103. Comments of the Ass'n of Pub. Television Stations, *supra* note 41, at 6.

104. *Id.*

105. *Id.*

106. *Id.* at 7.

the Digital Futures Initiative report outlined how public broadcasting might advance national goals in health care and wellness; its vision remains true today, if still unimplemented.[107]

In addition, some non-broadcast entities are active in the field, such as *Watch-In! For America's Health*, a new educational initiative that gets citizens and organizations to sponsor screenings of the film *Money-Driven Medicine: What's Wrong with America's Healthcare and How to Fix It*. The distributor of the film is California Newsreel, the country's oldest nonprofit media resource center.[108] PRX is demonstrating the utility of intentional aggregation of public service media and government content with Fluportal, which curates public service media and government-produced information, applications, widgets, and video content related to the H1N1 flu virus to inform individuals and support public service media coverage of the flu pandemic.[109]

The CPB's new Local Journalism Center ("LJC") initiative is another example of public service media efforts to provide content verticals. Each LJC is designed to run jointly by television and radio stations that will hire reporters, editors, and community outreach managers to report on topics of regional interest in their area.[110] The Southwest Center, for example, will focus on border and immigration issues, while the Midwest Center is focused on agribusiness. The Florida Center focuses on issues that are important to the state's large population of older residents, such as health care.[111]

Second, there is specialization by ***function***. While a need for local journalism exists in every community, local media entities can pool journalistic resources and exploit the journalistic depth of entities that specialize in journalism, wherever they are. Moreover, not every community needs to have a public service media entity specializing in education. There could be a specialist in every state or fewer, depending on various state interests in partnering with public service media for

107. THE DIGITAL FUTURE INITIATIVE PANEL, *supra* note 44, at 79-85.

108. *Watch-In! For America's Health*, MONEY-DRIVEN MEDICINE, http://www.moneydrivenmedicine.org/watch-in (last visited Nov. 28, 2010); *California Newsreel and Its Related Health Titles*, MONEY-DRIVEN MEDICINE http://moneydrivenmedicine.org/about-cn (last visited Nov. 28, 2010).

109. *About FluPortal*, FLUPORTAL.ORG, http://www.fluportal.org/about (last visited Nov. 28, 2010).

110. Comments of the Public Broadcasting Service, to the *Notice of Inquiry* in FCC Launches Examination of the Future of Media and Information Needs of Communities in a Digital Age, GN Dkt. No. 10-25, at 15 (May 7, 2010) [hereinafter PBS Comments]; *see also* Karen Everhart, *CPB to Aid 7 'Local Journalism Centers': About 50 New Employees Will Staff Stations' Specialized Regional Teams*, CURRENT (Apr. 5, 2010), http://www.current.org/news/news1006localcenters.shtml.

111. Comments of Native Public Media, to the *Notice of Inquiry* in FCC Launches Examination of the Future of Media and Information Needs of Communities in a Digital Age 21, GN Dkt. No. 10-25 (May 7, 2010); PBS Comments, *supra* note 110, at 15.

educational functions and the value of a state or regional approach.

We are seeing the beginnings of educational specialization with national educational materials coming out of the PBS Digital Learning Library[112] and PBS TeacherLine,[113] while at the same time, a few local public service media entities are concentrating in the educational sector. WGBH Boston's Teachers Domain is discussed above,[114] as is KQED's *Quest*, a multimedia series exploring science, environment, and nature in Northern California.[115] *Quest* includes video and audio on demand, a blog, interactive maps with photos and text, easy-to-embed videos, and lesson plans and trainings for classroom use of the program. In Kentucky, the Kentucky Education Network has developed LiteracyLink to connect underserved adults with teachers for quality adult education and GED preparation, using virtual classrooms and other online learning tools.[116]

Third, there is specialization by ***region***. The broadcast markets defined in the 1950s do not necessarily reflect today's demographic needs for media services. Not all communities can support the optimal amount of content production. Effective connections with the community can be overly resource-intensive. Given these constraints, and the natural distribution of interests, local communities can be aggregated by region with regional cooperation on content development, curation, and connection. For example, Minnesota radio station KAXE-FM led a collaboration with other regional organizations to create the Community Supported Journalism website, a hyperlocal journalism resource with content from both professional and volunteer journalists, covering approximately a dozen small towns across Northern Minnesota that would otherwise have no local newspapers.[117]

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112. PBS DIGITAL LEARNING LIBRARY, *supra* note 42; *Introducing the PBS Digital Learning Library*, PBS TEACHERS, http://www.pbs.org/teachers/dll (last visited Oct. 24, 2010).

113. *About PBS, Corporate Facts,* PBS, http://www.pbs.org/aboutpbs/aboutpbs_corp_education.html (last visited Nov. 28, 2010); PBS TEACHERLINE, http://www.pbs.org/teacherline (last visited Nov. 28, 2010). PBS TeacherLine is one of several PBS programs distributed through the federal Ready to Teach grant; Dep't of Educ., Ready to Teach Grant Program, ED.GOV, http://www.ed.gov/programs/readyteach/index.html (last visited Nov. 28, 2010). These programs can help push educational standards and student-customized content into school curricula. Broadband can play a critical role in bridging the middle mile and delivery of high-definition quality, interactive content from these programs directly into the classroom.

114. *See supra* text accompanying notes 41-42.

115. *See supra* text accompanying notes 70-72.

116. Comments of the Ass'n of Pub. Television Stations, *supra* note 41, at 9-10. It is the product of the Kentucky Educational Television's partnership with the Kentucky Department of Education, the PBS Adult Learning Service, and the National Center on Adult Literacy. Workplace Essential Skills and GED Connection, two of the resulting instructional systems from this partnership, are now adopted by numerous other states.

117. NORTHERN COMMUNITY INTERNET, http://www.northerncommunityinternet.org/community_journalism (last visited Nov. 28,

In order to capitalize on the modular content and functional expertise in public service media networks, these networks must actually function as ***networks***: the content must be easily shared, extended, and modified, and the models must be replicable, scalable, and sustainable nationwide. We will address these points in Subsection 4 below.

3. Engaging

Public outreach through both digital media and real space public gatherings implement the Public Broadcasting Act's concept of "outreach" or what is better known today as "engagement."[118] Imagined in the Act even in the 1960s was a system in which media content became the basis of community participation in public discourse. To that end, public service media entities would be responsible for fostering two-way communications and public engagement around narratives and information that mattered in people's lives. Digital public service media entities must commit themselves to models of engagement that facilitate public use of, argument with, comment on, and re-creation of communications. This kind of engagement is not only commanded by the Act, but reflects how media works in a world characterized by information sharing, rather than mere consumption.[119] To be effective, an engagement strategy is not something to be formulated after content is produced or information aggregated, but at the very beginning of the process.[120]

There is an understandable concern about the line between objective media content and advocacy. The first thing to be said is that engagement need not entail advocacy, but discourse. Public service media ought to be dealing with controversial matters of public concern and ought to be reaching out to engage stakeholders and community

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2010); *see also* Katie Donnelley, *Public Media Camp Round-Up*, CENTER FOR SOCIAL MEDIA, http://www.centerforsocialmedia.org/future-public-media/public-media-showcase/public-media-camp-round (last visited Nov. 28, 2010) (describing the Northern Community Internet Project, which includes the journalism website, in greater detail).

118. Public Broadcasting Act of 1967, 47 U.S.C. § 396(a)(8) (2000).

119. A number of legal and cultural scholars have described the reality of the "remix culture" in which individuals make transformative use of content available over digital networks. *See, e.g.*, LAWRENCE LESSIG, REMIX: MAKING ART AND COMMERCE THRIVE IN THE HYBRID ECONOMY (2008); CLAY SHIRKY, HERE COMES EVERYBODY: THE POWER OF ORGANIZING WITHOUT ORGANIZATIONS (2009); YOCHAI BENKLER, THE WEALTH OF NETWORKS (2007); Jack M. Balkin, *Digital Speech and Democratic Culture: A Theory of Freedom of Expression for the Information Society*, 79 N.Y.U. L. REV. 1, 3 (2004) (emphasizing the cultural and participatory features of digital technology).

120. *See, e.g.*, CORPORATION FOR PUBLIC BROADCASTING, REQUEST FOR PROPOSALS FOR PUBLIC BROADCASTING STATIONS TO TAKE PART IN THE COMMUNITY ENGAGEMENT INITIATIVE (Feb. 12, 2007) (seeking to develop new ways to make public service media more significant local organizations in their communities).

members in debate over these matters. Indeed, public service media entities are needed more than ever as virtual and real spaces where respectful and nuanced discourse can occur without the commercial pressures of generating ever more outrageous flares.[121] Broadband capabilities enable much more widespread participation in this discourse, and public service media entities should ensure that their content is easy to engage with.

In addition, there is no reason to fear advocates' use of public service media material in particular. There will be advocates on all sides of matters of public concern. It is to be expected—even desired—that public service media productions will be folded into all forms of public debate, including highly charged ones. Indeed, if such content is not part of the public discourse, public service media is failing in its mission.

Effective engagement will often be a matter of linking media content with community activities and interests. WYMS, Milwaukee, has connected its public radio broadcasts, blogs, and station events, while also linking to local artist websites, YouTube music videos, social networking tools, and discussions on videos about local and state-wide news.[122] The multiplatform engagement strategy has led to a 31% increase in listenership.[123] Public Broadcasting Atlanta launched LENS, a Local Educational Networking System, whereby residents can use a suite of social networking tools to connect with each other, neighborhood organizations, arts and educational resources, emergency services, and even with regional leaders such as the Atlanta mayor, who uses LENS as a direct pipeline between city residents and his office.[124]

Effective engagement components are also emerging from independent producers. Participant Media produces dramatic features and documentaries (including *An Inconvenient Truth*) that are designed in tandem with social action campaigns. The engagement portion of the work is integral to the production, not merely tacked on at the end of the process, and involves teams of nonprofits, social sector organizations, and corporations in establishing arenas for discussion and education.[125] ITVS' Community Cinema Project partnered with PBS to organize community screenings of films designed to reach diverse segments of the population, promote discussion of complex issues seldom explored in mass media, and enrich the cultural landscape with voices from underrepresented

121. THE FOUNDATION FOR PUBLIC MEDIA, A PLAN TO REVITALIZE PUBLIC MEDIA IN AMERICA 1 (2010) (discussing the polarized media, which "relies on opinion-based news programming that often enrages instead of educates," that has emerged as the newspaper industry declined).

122. EMBRACING DIGITAL, *supra* note 10, at 21.

123. *Id.*

124. LENS ON ATLANTA, http://www.lensonatlanta.org (last visited Oct. 24, 2010).

125. PUBLIC MEDIA 2.0, *supra* note 6, at 27.

communities.[126] Last season, the project partnered with over 1,000 organizations to hold 650 events in over 65 cities, with more than 40,000 participating; in total, some 42% in seven markets were identified as persons of color.[127]

Public service media entities also have a role to play in covering political elections by networking with other civic organizations, and with citizens themselves, in engaging local publics in the political system. One of the measures of political engagement is voting, and it is appropriate for public service media to encourage and equip citizens to vote. The public station in Rochester, New York, did this through its Overcoming Barriers to Civic Participation program, which provided deaf and hard-of-hearing individuals with full access to information over the Internet about political candidates and the election.[128] It incorporated captioned content and a Civic Sense laboratory that experimented with techniques to improve online accessibility on its election website.

In another example of meaningful engagement in the political process, Philadelphia's WHYY partnered with a good governance group, the William Penn Foundation, and other civic organizations to establish TheNextMayor.com.[129] The interactive election project was designed in anticipation of its next mayoral election to help ensure accountability, accuracy, and citizen feedback during the mayoral campaign. Project partners sought out and catalogued voter concerns, redefined issues, tracked each candidate's communications with different constituencies, posted every press release, and offered such detailed profiles that candidates were forced to become more accountable to their stated positions. The project had significant value for the community, with the site's visitor count skyrocketing as Election Day approached. The site has since been renamed "It's Our City," and centers on city budget and other decisions.

4. Networked

For modular production to work, and for public service media platforms to be maximally accessible and diverse, they need to be networked. This is perhaps the most important innovation to be wrought in public service media structure. There is no doubt that the public

126. *Community Cinema Screening Schedule*, INDEPENDENT LENS, http://www.pbs.org/independentlens/getinvolved/cinema (last visited Oct. 24, 2010).

127. The INDEP. TELEVISION SERV., COMMUNITY CINEMA: ENGAGING COMMUNITIES THROUGH FILM; Dru Sefton, *ITVS Brings Fresh Docs and Hot Popcorn*, CURRENT (Oct. 26, 2009).

128. *Overcoming Barriers to Civil Participation*, WXXI.ORG, http://wxxi.org/citizen/pmi/index.html (last visited Oct. 24, 2010).

129. JAN SCHAFFER, NEW MEDIA MAKERS: A TOOLKIT FOR INNOVATORS IN COMMUNITY MEDIA AND GRANT MAKING (2009).

broadcasting system has always valued connectivity. Indeed, the "interconnection system" that has facilitated distribution of the PBS national program schedule across the country is written into the law and supported by mandatory allocations from the CPB budget.[130]

Nevertheless, what we mean by a digital public service media network, or set of interoperable networks, is quite different from the hub and spoke network structure of broadcasting in which a closed set of local entities download content from the national provider by virtue of their membership in a national organization. We are talking about lateral networks open to many kinds of entities, consisting not of membership or other contractual arrangements, but of technical platforms, customizable content modules, shared tools, and templates.

Shared platforms into which multiple nonprofit media producers and individuals can deposit content have the benefit of supporting, in turn, the creation of more, better, and innovative follow-on content. The Public Radio Exchange, discussed above, shows what can happen when public service media content is made available over an open application program interface ("API")[131]—namely, that content becomes much more accessible and useful to the public, and that innovators can write applications to curate and magnify the expressive value of public service media content and follow-on creation.[132]

It is promising that NPR, in partnership with others, is working to expand its API to include content from more public service media organizations (e.g., APM, PRI, NewsHour, and others).[133] This API will enable participants to share journalism and related content among themselves, which will require the development of concrete business rules to govern the exchange and use of content. The platform also has the potential to link public broadcasters with new partners, with the API becoming a permeable barrier by which content can flow among public service media entities and beyond.

The use of tools that improve search and content aggregation support the curatorial functions of public service media. If all public service media producers were to use interoperable systems of content

130. 47 U.S.C. § 396(g)(1)(B) (2000) (authorizing the CPB to establish and develop "one or more interconnection systems to be used for the distribution of public telecommunications services").

131. *See supra* text accompanying notes 46-47.

132. For a description of this kind of "distributed distribution" efforts in public service media, *see NPR's Digital Distribution Strategy*, TECHNOLOGY360 BLOG (Sept. 8, 2008, 13:24), http://technology360.typepad.com/technology360/2008/09/nprs-digital-di.html.

133. Press Release, NPR, Am. Pub. Media, NPR, PBS, Public Radio International (PRI) and Public Radio Exchange (PRX) Partner to Create a Shared Digital Content Platform (June 14, 2010), *available at* http://www.npr.org/about/press/2010/061410.PMPLaunch.html; Eliot Van Buskirk, *Public Media Joins Forces for One Big Platform*, WIRED (June 14, 2010), http://www.wired.com/epicenter/2010/06/public-media-joins-forces-for-one-big-platform.

management that were recognized by each other, it would become possible for public service media to aggregate mission-serving media and make it most useful for the public. Such tools provide the means for citizens and communities to interact with public service media content and applications. An early experiment in a metadata and cataloging resource for public broadcasters was PBCore—the first online content publishing standard for public broadcasting. PBCore 2.0 would make the metadata hub a part of the public service media content workflow in enhancing the utility of content as it moves through production, post-production, and distribution.[134]

Some of the most exciting developments in public service media involve partnerships among community groups, schools and educators, government, non-profit institutions, and media producers of all kinds.[135] The value of these projects would be magnified within and across communities if they were easily replicable and customizable. In other words, they should be capable of being scaled up and broken down. KCET's Departures program is producing a new media platform and curriculum for students to better understand the residents and cultural fabric of the local Los Angeles communities in which they live.[136] Partnering with local high schools and colleges, KCET allows students to communicate with teachers through a wiki-based environment, upload their own stories onto a map, and engage with the narratives of others.[137] KCET has designed this curriculum to be a template for other communities as well. The templates for the program, as well as the content, will be essential in replicating the Los Angeles experiment elsewhere.

Of course, the sharing of content and tools across networks implicates intellectual property rights management. This is a complex subject beyond our scope. It is clear that enabling content to flow demands reasonable upstream permissions from third-party rights holders with respect to media inputs. Public service media makers must have adequate, affordable, and efficiently clearable rights if they are to archive content and make it widely available for personal noncommercial

134. PBCORE, http://pbcore.org/2.0 (last visited Oct. 24, 2010).

135. PBS Education, for example, will be hosting a Digital Content Summit in April 2010 to bring together several public service and education institutions to share their digital media and education initiatives with each other, and discuss how to work collaboratively on them. PBS Education, Public Media In Education Digital Content Summit, Conference Invitation, Apr. 14, 2010. Invited institutions include NPR, the National Science Foundation, Smithsonian Education, and National Geographic Education. *Id.*

136. Amanda Hirsch, *KCET's 'Departures' Exemplifies Community Collaboration*, MEDIA SHIFT (Aug. 24, 2010), http://www.pbs.org/mediashift/2010/08/-kcets-departures-exemplifies-community-collaboration236.html.

137. Interview with Juan Devis, Dir. of Prod. New Media, KCET (Oct. 9, 2009).

use, educational use, other mission-related uses, and follow-on creation. At the same time, public service media entities should be subject to reasonable downstream access rights so that the public and other media makers have access to the content that public service media creates. Those who fund public service media, including CPB and foundations, should insist that public service media products, from copyrighted narratives to code, should be as close to open-source as possible in terms of allowing users to stream, download, remix, and innovate.[138]

We highlighted the intellectual property challenges facing public service media in our comments to the FCC[139] and are gratified that the Commission took up the issue. In the National Broadband Plan, it recommended that Congress consider amending the Copyright Act to provide copyright exemptions for online broadcast and distribution of public media, and to facilitate archiving public media content.[140]

5. Diverse

Diversity is a value central to the Public Broadcasting Act. Public service media is supposed to serve underserved audiences.[141] Ethnic minorities have always been among the underserved audiences, as are children and youth. This service disparity seems to be perpetuated in the broadband world.[142] There are other dimensions of diversity that need focused attention and intentional development in all aspects of public service media functions. As a group of diverse public service media producers wrote in an "open letter" to the public service media community earlier this year: "The commitment to embrace diversity as a core principle of our work requires that we engage more deeply with its complexity. In addition to race and ethnicity, diversity includes perspectives and identities generally underrepresented in our mainstream media due to geography, income and education levels, physical disability and sexual preference."[143]

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138. It is not possible to deal in absolutes because public service media entities themselves are bound by myriad and complicated licenses imposed by the owners of upstream components of their creations, including writers, actors, and owners of stock footage, still photographs, and music. For a description of some of these copyright complexities, see BERKMAN CTR. FOR INTERNET AND SOC'Y, DIGITAL LEARNING CASE STUDY: WGBH AND THE PUBLIC BROADCASTING STATUTORY EXCEPTIONS.

139. Goodman & Chen Comments, *supra* note 4, at 29-30.

140. THE NATIONAL BROADBAND PLAN, *supra* note 2, at 304.

141. 47 U.S.C. 396(a)(6) (2010) (citing as a policy goal to serve "unserved and underserved" audiences).

142. BROADBAND IMPERATIVES FOR AFRICAN AMERICANS: POLICY RECOMMENDATIONS TO INCREASE DIGITAL ADOPTION FOR MINORITIES AND THEIR COMMUNITIES 3-4 (2009) (noting a persistent disparity in broadband adoption between minority populations and other groups).

143. AN OPEN LETTER TO OUR PUBLIC MEDIA COLLEAGUES, *supra* note 7, at 4; *see*

Public service media to date has not done an adequate job of serving underserved audiences, notwithstanding many efforts in that direction. Public service media content, workforce, and audience are all insufficiently diverse.[144] More innovation and more risks are necessary to diversify the reach and representation of public service media; the broadband proliferation of communications channels can support these objectives.

One way to increase diversity of voice is by opening up and yielding some control over public service media platforms. Chicago's WBEZ created Vocalo by splitting off one of its repeaters to target an audience formerly unreached by the station.[145] With a tag line of "You Make It. We Broadcast It," Vocalo has no programming. Instead, it offers a partially user-created platform by which users can upload content, and participate in a continuous talk-based stream exclusively focused on the culture, issues, and music of the metropolitan area.

Another way to increase diversity is to integrate a concern for diverse voice and experience into the fabric of content development. For its latest news program, *The Takeaway*, public radio station WNYC in New York aggressively sought out diversity in assembling its production team. It advertised within the Asian American Journalist Association, Spellman College, Native American Journalist Association, National Association of Black Journalists, National Association of Hispanic Journalists, and the South Asian Journalist Association to recruit new staff based on journalistic expertise, work ethic, intellectual curiosity, and openness to new media. The program now has one of the most diverse production teams in public radio.[146]

Technology choices are central to any diversity-enhancement effort. It turns out that users of online public service media tend to be far more diverse than the audience for linear broadcast programming,[147] and

also Public Broadcasting Stimulus Letter, *supra* note 45, at 1 (citing the need for "media 2.0 technology" to reach audiences from diverse ethnicities and economic and social backgrounds).

144. For example, African Americans are only about 80% as likely to be found in public radio's weekly audience, and Hispanics only 42% as likely, relative to the proportion of their respective ethnicities in the general population. GROW THE AUDIENCE, *supra* note 6, at 12, 13. The PBS audience profile is also skewed to those under age 7 and over age 46, largely missing the adolescent, young adult, and younger middle-aged populations. Silver, *supra* note 46, at 279. The media industry at large is also relatively un-diverse—minority journalists have never accounted for more than 14% of the total professional print journalism community. KNIGHT COMM'N, *supra* note 6, at 54. In television and radio, less than 4% of commercial TV stations and less than 8% of commercial radio stations are owned by people of color. Silver, *supra* note 46, at 280.

145. GROW THE AUDIENCE, *supra* note 6, at 19.

146. *Id* at 16.

147. For example, two-thirds of Web visitors to PBS's general audience site are under 45 years old, constituting a whole new audience for public stations, according to PBS Vice President Jason Seiken. Steve Behrens, *Fields Proposes Trust Fund, But Caps Its Size at $1*

online public service media resources prove to be particularly important to minority Internet users. For example, African Americans use PBSkids.org 16% more than they use other U.S. websites; for Latinos, the figure is 98% more, and for Asian-Americans, 142% more.[148] Public service media must reach more diverse populations, and particularly younger ones, by pushing the envelope on new media formats. According to the Open Letter on Diversity,

> America's younger and more ethnically diverse audiences are public media's great, untapped resource. Young viewers and listeners are multilingual and multicultural, passionate bloggers and voracious content seekers. The increasingly commercial Internet positions them primarily as consumers, but they are hungry to exercise their power of choice as global citizens and generators of media content in the new digital landscape.[149]

Network platforms and tools are essential in diversifying public service media users. GenerationPRX, for example, is a project of PRX that focuses specifically on youth-produced radio.[150] PRX networks with an advisory board of experienced broadcasters and youth radio producers to create a space for youth to share ideas, strategies, and materials, and to offer peer feedback and review from a Youth Editorial Board. The site helps to distribute youth radio by building an online catalogue that is accessible to stations, producers, and listeners through PRX.

Finally, of course, the selection of subject matter and associated engagement tools in public service media content will affect the diversity of the public served. One successful recent undertaking is *The Masculinity Project*, based on a partnership between the National Black Programming Consortium ("NBPC") and ITVS. The multiyear initiative enlists community partners to help produce dozens of short films—both original and re-versioned—and audio pieces that integrate participatory tools and multiple platforms to showcase myriad perspectives on race and gender.[151] The project's robust website also incorporates content-relevant blogs and discussion forums, creating a virtual community record of the real, rather than stereotypical, issues affecting African-Americans in the United States. The *Project* draws heavily on participatory tools and platforms to showcase different perspectives on race and gender.

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billion, CURRENT (Mar. 11, 1996), http://www.current.org/mo/mo605.html.

148. Silver, *supra* note 46, at 281.

149. AN OPEN LETTER TO OUR PUBLIC MEDIA COLLEAGUES, *supra* note 7, at 4.

150. EMBRACING DIGITAL, *supra* note 10, at 26-27.

151. BEST PRACTICES, *supra* note 10, at 22.

6. Innovative

"Experimental" is a word from the Public Broadcasting Act that is often forgotten but important to remember. Public service media should be, and sometimes is, an incubator of experiments that market and non-market forms of amateur production will not support. It is also a proving ground for experiments—in content, engagement practices, technological innovations, narrative forms, or business models—that can then go on to influence commercial practice. For better and for worse (as experimentation often is), public broadcasting incubated reality television as a narrative form. It also incubated the Children's Television Workshop (now Sesame Workshop) as a private nonprofit engaged in the production of children's television for public service media.[152] Its early experiments in fostering community dialogue on race pioneered a model of sustainable, diversified community engagement practices now common in public broadcasting, and in documentary filmmaking more generally.[153] As the journalism sector seeks models for supporting newsgathering functions, public service media entities are in a good position to innovate.[154] They have long relied on voluntary financial contributions to support their work, and now should illustrate new ways of "crowdfunding" media services.[155]

Innovation in content, delivery, and engagement strategies will depend on better broadband. The innovative use of games, for example, to engage students in connecting historical narratives to their own moral choices,[156] requires robust broadband to the school and to the home. Public service media could perform almost all of its functions better if the

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152. *See* Alison Alexander, *Children's Television Workshop*, THE MUSEUM OF BROADCAST COMMUNICATIONS, http://www.museum.tv/eotvsection.php?entrycode=childrenste (last visited Oct. 24, 2010).

153. *See* BARBARA ABRASH, CTR. FOR SOC. MEDIA, THE VIEW FROM THE TOP: P.O.V. LEADERS ON THE STRUGGLE TO CREATE TRULY PUBLIC MEDIA 10-11 (2007).

154. DOWNIE & SCHUDSON, *supra* note 12, at 12 ("[D]igital technology—joined by innovation and entrepreneurial energy—is opening up new possibilities for reporting"); CUNY GRADUATE SCH. OF JOURNALISM, NEW BUSINESS MODELS FOR NEWS: PROJECT UPDATE 4-5 (2009); WESTPHAL, *supra* note 7, at 5 (quoting Thirteen/WNET New York President Neal Shapiro that " . . . public broadcasting is one area where you can produce quality journalism that has a tremendous reach" and discussing hybrid models based on public broadcasting models).

155. Public service media programs that are already raising funds online include public radio shows *Living on Earth* and *This American Life*, as well as public television's *In the Life*. Karen Everhart, *ReelChanges Tests 'Crowdfunding' of pubTV Production*, CURRENT (Mar. 30, 2009), http://www.current.org/funding/funding0906crowdfunding.shtml (listed on side banner of website).

156. *See, e.g.*, *Helping Classrooms and Communities Worldwide Link the Past to Moral Choices Today*, FACING HISTORY AND OURSELVES, http://www.facinghistory.org/ (last visited Nov. 5, 2009) (an international educational and professional development nonprofit organization aiming to engage students of diverse backgrounds in issues such as racism, prejudice, and anti-Semitism through multimedia).

nation had faster and universal broadband. A few examples show that much of what public service media does, and should in the future do, depends on better broadband.

Hosted by Nashville Public Television, Next Door Neighbors is a multi-faceted community project that raises awareness of Nashville's relatively large immigrant and refugee communities. Its documentary series, panel discussions, community forums, and literacy workshops offer ways to learn of these new communities and the changing social, economic, and cultural life of the city. Next Door Neighbors relies heavily on broadband to reach the public, most of which accesses the content online. The lack of access to broadband in rural areas of Middle Tennessee—areas that now include an increasing number of Somali, Hispanic, and other immigrant contingencies—has made it difficult to be able to serve these audiences. Next Door Neighbors has also had to find alternatives to uploading and streaming their videos because of prohibitive streaming costs.[157]

Skylight Pictures is a public service media group that produces documentary films on issues of human rights and social justice. Skylight Pictures would like to develop more robust video delivery systems for its films and ancillary modules it produces for high schools and universities, but the limited broadband speeds of the participating classrooms and communities (usually T1 or T2 connection speeds) have prohibited seamless viewing and high resolution. Thus, streaming costs and limited broadband speeds for uploading as well as downloading have also limited Skylight Pictures's effectiveness and reach.[158]

It is not only the build-out of broadband infrastructure that is critical. In the 20th century, the distribution costs for public service media consisted mostly of broadcast transmission costs. These costs remain as long as there is broadcasting. But, public service media entities now have to bear another distribution cost at the same time—the cost of streaming broadband video, and unlike in broadcasting, where cost of distribution does not vary with audience size, these costs continue to rise with each additional broadband user. In other words, the better public service media entities are at reaching users and engaging them over broadband and mobile technologies, the more these services cost to provide.

With increasing numbers turning to online public service media

157. *Next Door Neighbors*, NASHVILLE PUBLIC TELEVISION, http://www.wnpt.org/productions/nextdoorneighbors/ (last visited Nov. 5, 2009); Interview with Kevin Crane, Vice President of Content & Tech., Nashville Pub. Television (Oct. 6, 2009).

158. SKYLIGHT PICTURES, http://skylightpictures.com (last visited Nov. 28, 2010); Interview with Paco de Onis, Producer, Skylight Pictures (Sept. 18, 2009).

sources—in the past year, PBS.org data demands have tripled,[159] putting it in the third highest tier of bandwidth usage[160]—this has become a sizable challenge. Public radio station XPN in Philadelphia, for example, reports that it costs about 100 times more per listener to stream than to broadcast. With a weekly cumulative broadcast audience of about 300,000 and an annual electricity bill for broadcast transmission of about $7,000, XPN spends at least 2 cents per unique listener each year.[161] But to stream to its online audience of approximately 45,000, XPN must spend about $9,000 in bandwidth costs—amounting to $2 per user.[162] As American Public Media CEO and President Bill Kling described, "[W]e can reach 14 million people in Los Angeles with a transmitter that runs on 600 watts of power. If we tried to reach 14 million people with broadband . . . we'd be bankrupt."[163]

The future cost structure for public service media is uncertain, in part because it is in the control of commercial entities. This is new. Public broadcasting has in the past controlled its own infrastructure. This is what the FCC enabled by reserving channels for the exclusive use of noncommercial media.[164] In the digital world, there is no such reservation and no dedicated public infrastructure, so public service media entities are reliant on the public internet to transmit content. As the FCC has recognized, it is very possible that broadband service providers will create, alongside the public internet, a special tier of service that is faster and more costly.[165] If public media entities have to pay more to reach users with the most innovative (and bandwidth intensive) services, they probably will not be able to do it, or to participate fully in the broadband future. As we discuss below, some sort of "broadband reservation" will be necessary to effectuate the principle that public service media infrastructure be as robust as commercial media

159. PBS Comments, *supra* note 110, at 19.

160. Memorandum from Eric Wolf titled Summary of Trends in Online Delivery Costs to Jason Seiken & John McCoskey 4 (July 26, 2010) (on file with author). The highest tier users (e.g., Google, Comcast, Amazon) build their own content delivery networks; second-tier users (e.g., Netflix, Apple) are large enough to command uniquely low rates. *Id.*

161. E-mail from Roger LaMay, General Manager, WXPN Public Radio, to David Cohen (June 23, 2010, 18:10:24 ET) (on file with author).

162. *Id.* Broadcast transmission costs include more than simply electricity costs, so the comparison probably understates the current costs and overstates the increase by some amount.

163. Transcript of FCC Workshop at 384, *The Future of Media & Information Needs of Communities: Public and Other Noncommercial Media in the Digital Era* (Apr. 30, 2010).

164. *See, e.g.*, THE HISTORY OF PUBLIC BROADCASTING, *supra* note 19, at 7-9 (describing the impetus behind reserving spectrum dedicated for noncommercial educational use); RALPH ENGELMAN, PUBLIC RADIO AND TELEVISION IN AMERICA: A POLITICAL HISTORY 36-38 (Astrid Virding ed., 1996).

165. Further Inquiry into Two Under-Developed Issues in the Open Internet Proceeding, *Notice of Inquiry,* GN Dkt. 09-191, WT Dkt. 07-52 (Sept. 2, 2010), *available at* http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db0901/DA-10-1667A1.pdf.

infrastructure.

7. Transparent

If the purpose of public service media is to increase public knowledge and democratic engagement around important issues in the lives of individuals and communities, it seems obvious that there should be public knowledge and engagement around public service media operations themselves. To this end, the Public Broadcasting Act requires that CPB meetings are open to the public and imposes a range of reporting requirements on public broadcasting stations.[166] However, much more can be done by public service media entities in terms of transparent operation. Two areas in particular deserve special mention:

Journalistic transparency. Perhaps the greatest value of the legacy public broadcasting system resides in the trust the public reposes in the national public broadcasting brands.[167] These brands are trusted to signify thoughtful, high quality, and thoroughly reported information, as well as narratives that speak a truth.[168] It is the mission-orientation of public service media—its intentional advancement of public engagement around important topics—that undergirds the trust it enjoys. The preservation of this trust requires transparency in the news gathering process. Public service media participants ought to set the standard for transparency in both sourcing and personal affiliations.[169] It is not always

166. Public Broadcasting Act of 1967, 47 U.S.C. § 396(g)(4) (2000) (mandating that "[a]ll meetings of the Board of Directors of the Corporation, including any committee of the Board[,]" be open to the public).

167. In 2009, Americans ranked PBS as their most valued institution, second only to the military, and put NPR third, tied with law enforcement—the sixth consecutive year that Americans ranked PBS as No. 1 in public trust, above newspapers, commercial broadcasters, the judicial system, and the federal government. Silver, *supra* note 46, at 263; *see also* BEST PRACTICES, *supra* note 10, at 25 ("surveys show that public broadcasting is among the most trusted sources of information about science").

168. GROW THE AUDIENCE, *supra* note 6, at 1 (citing the "quality, depth . . . authenticity, close connections to local communities, and leverage and scale of multiple national networks" as reasons for public radio's strong trust factor among its audiences).

169. The value of transparency in new media has not been lost on journalism commentators. *See, e.g.*, David Weinberger, *Transparency is the New Objectivity,* JOHO THE BLOG! (July 19, 2009), http://www.hyperorg.com/blogger/2009/07/19/transparency-is-the-new-objectivity (suggesting that transparency in fact "subsumes" objectivity in capturing a reliability in new media that objectivity once did in old media); Dan Gillmor, *Washington Post, Social Networks and Transparency,* MEDIACTIVE BLOG (Sept. 30, 2009, 1:38 PM), http://mediactive.com/2009/09/30/washington-post-social-networks-and-transparency (arguing that transparency will become "one of journalism's core principles in this new era"); Matthew Ingram, *Is Transparency the New Objectivity? 2 Visions of Journos on Social Media,* NIEMAN JOURNALISM LAB (Sept. 28, 2009, 09:58 AM), http://www.niemanlab.org/2009/09/is-transparency-the-new-objectivity-2-visions-of-journos-on-social-media (reviewing past debates about whether transparency should become a laudable virtue in the media industry).

possible to suppress bias, but transparency helps to reveal it and allows the public to interrogate content for slant and accuracy—the very kind of engagement that supports democratic practices.

Funding transparency. The second kind of transparency that should be increased throughout public service media networks concerns funding. While there is plenty of public reporting about government and private grants, the reporting does not support easy public access and analysis. In addition, much of the reporting from CPB grantees back to CPB never sees the light of day. If it did, in ways that were user-friendly and machine readable, the data could help the public to assess the efficacy and direction of public service media funding. The reporting required of CPB grantees is already onerous and CPB reporting to Congress is also heavy. We believe it unlikely that increasing these requirements would serve the public. However, changing the reporting criteria and improving ease of access to what is reported would make the requirements that are supposed to serve transparency goals much more meaningful.[170]

II. LEGAL REFORMS TO SUPPORT NEW SYSTEMS OF DIGITAL PUBLIC SERVICE MEDIA

Significant changes will be necessary before public service media can be the engine it should be for broadband adoption and full public participation in the information age. The FCC took the first step in its National Broadband Plan in recognizing the role that public service media might play in advancing broadband adoption and the public purposes of broadband deployment.[171] Most of the reforms that are needed to maximize this role are beyond the FCC's authority and must be implemented by Congress and in the field. The following outlines a number of specific legislative proposals that would support the

170. President Obama's statements promoting transparent policies in his Administration are consistent with this position. Transparency and Open Government: Memorandum for the Heads of Executive Departments and Agencies, 74 Fed. Reg. 4685 (Jan. 21, 2009) ("Transparency promotes accountability and provides information for citizens about what their Government is doing. Information maintained by the Federal Government is a national asset. . . . Executive departments and agencies should harness new technologies to put information about their operations and decisions online and readily available to the public."); Freedom of Information Act: Memorandum for the Heads of Executive Departments and Agencies, 74 Fed. Reg. 4683 (Jan. 21, 2009) ("A democracy requires accountability, and accountability requires transparency. . . [A]gencies should adopt a presumption in favor of disclosure . . . [and] take affirmative steps to make information public"); *see also* Timothy Hay, *America's CTO Aneesh Chopra Challenges Tech Sector*, WSJ BLOG (Sept. 19, 2009, 7:02 PM ET), http://blogs.wsj.com/venturecapital/2009/09/19/americas-cto-aneesh-chopra-challenges-tech-sector (describing Obama Administration CTO's exhortations for improved government transparency and digitized, wider access to government data as key for improving government activities).

171. THE NATIONAL BROADBAND PLAN, *supra* note 2, at 303-04.

flourishing of a new kind of public service media for digital networks.

A. Congress Should Amend the Public Broadcasting Act

We need a new Public Service Media Act that preserves the central aspirations of the Public Broadcasting Act, but implements them in a technology-neutral way and emphasizes the structural principles outlined above.

The most significant failing of the existing Act is that it creates an entitlement to scarce federal public service media funding for radio and television broadcast licensees, but does not create a corresponding pool of funding for entities operating on other platforms. As a result, it locks in many public service media entities to technologies that some should abandon and locks out many public service media entities who should be qualified to compete for federal funds. In addition, the Act fails to set meaningful expectations for public service media entities that receive federal funding—expectations that would generate better public service in creating, curating, and connecting. More specific and measurable expectations derived from the kind of structural principles laid out above need not be written into the Act itself. However, CPB—renamed the Corporation for Public Service Media and restructured to reflect today's digital realities—should be charged with implementing clear performance guidelines.

By the same token, copyright laws that were written to support public broadcast distribution of content need to be updated to accomplish the same goals on digital networks.[172] The special copyright provisions that apply to public broadcasting are designed to reduce transaction costs entailed in clearing the upstream rights to music and other material included in content transmitted over public broadcasting airwaves.[173] As the airwaves become only one of many distribution mechanisms, and as it becomes possible for public service media entities

172. 17 U.S.C. § 114(b) (2006) (granting public broadcasters the right to use sound recordings without permission or in educational television and radio programs that are not commercially distributed); § 118(c) (granting a compulsory license to use "published nondramatic musical works and published pictorial, graphic, and sculptural works"); Ellen P. Goodman, *Public Service Media 2.0, in* …AND COMMUNICATIONS FOR ALL: A POLICY AGENDA FOR A NEW ADMINISTRATION 270 (Amit M. Schejter ed., 2009) (discussing how technological and business changes have rendered special copyright benefits to public broadcasters increasingly useless); WILLIAM W. FISHER & WILLIAM MCGEVERAN, THE DIGITAL LEARNING CHALLENGE: OBSTACLES TO EDUCATIONAL USES OF COPYRIGHTED MATERIAL IN THE DIGITAL AGE 7 (2006) (finding that copyright laws and practices such as unclear or inadequate copyright provisions, extensive digital rights management, onerous rights obtainment processes, and unduly cautious rights gatekeepers are "among the most important obstacles to realizing the potential of digital technology in education").

173. Goodman, *supra* note 172, at 270.

to expand access to archival content and distribute content to individuals in a variety ways, these provisions do less and less. They hardly reduce transaction costs in the rights clearance process, which now needs to be conducted for all media, not just broadcast. Moreover, they do very little to unlock access to thousands of hours of important public service media content now. Copyright provisions should therefore be updated to reflect the reality of digital media and today's larger media-making ecosystem. The *quid pro quo* for any expansion in copyright benefits for public service media entities is that the works they create should be as open as possible to downstream uses.

B. Congress Should Conduct a Pan-Governmental Audit of Public Service Communications Spending

In addition to the annual federal appropriation to CPB, and other appropriations to public broadcasting stations and producers, many federal dollars are spent on public service communications. The CDC produces media on the flu virus.[174] The Department of Agriculture produces media on nutrition.[175] The Federal Trade Commission offers resources and media on identity theft.[176] The Office of Citizen Services hosts a kids.gov website with interactive activities and links to government pages on topics such as animals in national zoos, political systems and governance, careers in government, and profiles of other states.[177] These are all examples of federal spending on what are essentially public service media projects designed to inform and engage the public.

At a minimum, these expenditures ought to be more transparent. Like the federal government's IT expenditures, they ought to be made subject to public inquiry and scrutiny.[178] Moreover, an audit might well

174. *See, e.g.*, *Seasonal Influenza (Flu)*, CTR. FOR DISEASE CONTROL AND PREVENTION, http://www.cdc.gov/flu (last visited Nov. 28, 2010); *Know What to Do About the Flu*, FLU.GOV, http://flu.gov (last visited Nov. 28, 2010) (an interagency government website providing comprehensive, government-wide information on pandemic influenza and avian influenza).

175. *See, e.g.*, *Smart Nutrition Starts Here*, NUTRITION.GOV, http://www.nutrition.gov (last visited Nov. 28, 2010); United States Dep't of Agric., *Steps to a Healthier You*, MYPYRAMID.GOV, http://www.mypyramid.gov/index.html (last visited Nov. 28, 2010).

176. *Fighting Back Against Identity Theft*, FED. TRADE COMM'N, http://www.ftc.gov/bcp/edu/microsites/idtheft (last visited Nov. 28, 2010).

177. *The Official Kids' Portal for the U.S. Government*, KIDS.GOV, http://www.kids.gov (last visited Nov. 28, 2010).

178. *See, e.g.*, FEDERAL IT DASHBOARD, http://it.usaspending.gov (last visited Nov. 28, 2010); *FAQ – For Public*, FEDERAL IT DASHBOARD, http://it.usaspending.gov/?q=content/faq-public (last visited Nov. 28, 2010) (describing the Dashboard as a resource to provide the public with details of federal information technology investments and the ability to track investment progress over time).

reveal that funds spent on public service communications could be more effectively leveraged if that content were networked over public service media platforms. Some of this material should be archived and extended through public service media applications and tools. Some of it should be part of locally based public engagement campaigns that exploit the connectivity of public service media entities. Some should be developed in coordination with, or build upon, innovative public service media strategies. If given systems that are modular and networked, there is every reason to believe that the public would get more value from government-supported communications extended over these networks.

The largest federal expenditure for public service media—larger even than its appropriation for public broadcasting—comes in the form of the more than $700 million appropriation to the Board of Broadcast Governors ("BBG"), a stand-alone agency, for "public diplomacy" or international broadcasting.[179] This funding is allocated for all U.S. civilian international broadcasting, such as Voice of America, Radio Free Europe/Radio Liberty, Radio Free Asia, the Middle East Broadcasting Networks, and the Office of Cuba Broadcasting.[180] The stated mission of the BBG is "to promote freedom and democracy and to enhance understanding through multimedia communication of accurate, objective, and balanced news, information, and other programming about America and the world to audiences overseas."[181]

While public diplomacy and public service media have different missions, to the extent that they are both engaged in producing credible and high quality news across the globe, there are synergies to be had between them. A recent flurry of criticism of the BBG argues that the entire structure of that media organization should be rethought.[182] We agree that the system for producing public diplomacy through media is antiquated and full of redundancies. The restructuring of media systems for strategic diplomatic purposes should include an examination of how

179. As of 2008, the government had allocated some $671 million to BBG programs. LEE C. BOLLINGER, UNINHIBITED, ROBUST, AND WIDE-OPEN: A FREE PRESS FOR A NEW CENTURY 102 (2010). The estimated budget for 2010 is $757.7 million. *FAQ's*, BROAD. BD. OF GOVERNORS, http://www.bbg.gov/about/faq (last visited Nov. 28, 2010).

180. *About the Agency*, BROAD. BD. OF GOVERNORS, http://www.bbg.gov/about/index.html (last visited Nov. 28, 2010).

181. *About the Agency*, *supra* note 180 (look to right side banner of website); *see also Broadcasting Standards and Principles*, BROAD. BD. OF GOVERNORS, http://www.bbg.gov/about/standards (last visited Nov. 28, 2010) (listing the BBG's broadcasting standards and principles).

182. *See, e.g.*, Kim Andrew Elliott, *Radio Free of Bureaucracy*, N.Y. TIMES, July 12, 2010, at A25; Lee C. Bollinger, *Journalism Needs Government Help*, WALL ST. J., July 14, 2010, at A19; BOLLINGER, *supra* note 179, at 104-05; Shawn Powers, *U.S. International Broadcasting: An Untapped Resource for Ethnic and Domestic News Organizations*, *in* WILL THE LAST REPORTER PLEASE TURN OUT THE LIGHTS (forthcoming 2011).

federal funding to produce high quality media for foreign consumption could directly benefit the American media consumer as well.

C. Spectrum Auctions and Public Service Media

Over the years, there have been repeated proposals to use revenue from the auction of any repurposed television broadcast spectrum to fund public service media.[183] In our comments to the National Broadband Plan, we urged that the FCC seek statutory authority to use future broadcast spectrum auction revenue to help support (and incent) a reformed system of public service media. Specifically, we supported the "reallocation of some of the reserved [noncommercial TV broadcast] band, under conditions which ensured that public media resources would remain in the local communities of license."[184] This, we thought, would benefit both public service media and larger spectrum policy goals.

We thought that an exchange of some noncommercial media spectrum assets for cash to support public service media should be made in accordance with a few basic principles. These were the principles of spectrum flexibility (moving spectrum to its highest valued use, which in the case of noncommercial media might be its cash value), spectrum efficiency (doing more with less spectrum), public service (retaining and growing noncommercial media assets in the digital era), and technological neutrality (allowing noncommercial media entities to invest assets in the most appropriate distribution technologies).[185]

In its National Broadband Plan, the FCC importantly accepted the basic principle that it is in the national interest to establish a trust fund for the future of public service media using revenue generated by broadcast television spectrum auctions.[186] Unfortunately, the accounts of the fund's purposes, its operations, and the incentives that would be

183. *See, e.g.*, Silver, *supra* note 46, at 270 (suggesting reserving a percentage of all future spectrum auction revenue as a possible means of ensuring funding for public service media); THE DIGITAL FUTURE INITIATIVE PANEL, *supra* note 44, at 115-16 (suggesting allocating federal revenue source such as spectrum auction to fund public service media); Steve Behrens, *Fields Proposes Trust Fund, But Caps Its Size at $1 billion*, CURRENT (Mar. 9, 1996), http://www.current.org/mo/mo605.html (describing a legislative proposal to fund the CPB through revenue generated from spectrum auctions); ADVISORY COMM. ON PUB. INTEREST OBLIGATIONS OF DIGITAL TELEVISION BROADCASTERS CHARTING THE DIGITAL BROADCASTING FUTURE: FINAL REPORT 82 (Dec.1998) (mentioning Henry Geller's proposal to implement a mandatory "pay" system where all broadcasters would be relieved of public interest obligations in exchange for a percentage of gross revenues and revenues from license transfers). Indeed, even in 1979, *Carnegie II* proposed that spectrum fees be imposed to support public broadcasting. CARNEGIE II, *supra* note 1 (recommending the establishment of a fee on licensed uses of spectrum, so that income from the fee can be used for public broadcasting).

184. Goodman & Chen Comments, *supra* note 4, at 31.

185. *Id.* at 31-33.

186. THE NATIONAL BROADBAND PLAN, *supra* note 2, at 91-92.

necessary to get public broadcasters to relinquish spectrum, were all rather vague. Whereas the FCC recognized that commercial broadcasters would require financial incentives (a portion of the auction proceeds) to get them to surrender their licenses and vacate spectrum,[187] it did not acknowledge that noncommercial broadcasters would have the same needs.[188] Public TV stations will almost certainly need compensation to vacate channels.

Another item that was not made clear in the National Broadband Plan, and that should be made explicit, is that all revenue raised from noncommercial broadcast spectrum should be plowed back into noncommercial public service media in the form of incentive payments and the funding of public service media projects. The FCC reserved noncommercial broadcast spectrum for public service media beginning in the 1930s.[189] In essence, this amounted to the creation of national parkland—a space reserved from commercial development for particular public purposes. In the absence of a publicly deliberated decision that the parkland is no longer needed, it should not be forfeited. Even if a piece of the park is developed for other purposes (e.g., mobile broadband), the park asset (spectrum value) should be deployed to support the public mission underlying the spectrum reservation.

The FCC has recently initiated a Notice of Proposed Rulemaking[190] to begin to put in place the rules that would allow television stations to reduce their spectrum use. Bills have been introduced in Congress that would authorize the FCC to conduct incentive auctions to free up broadcast spectrum for broadband uses.[191] Any such legislation should include provisions creating a fund for public service media and directing the FCC to preserve the public service media asset in one form or another.

187. *Id.* at 90 (describing incentives for stations that participate in auctions); *id.* at 304 (proposing a system in which commercial television broadcasters may contribute some or all of their spectrum allocation, while adding specific provisions that would ensure stations would not go off the air and would "continue receiving all the benefits of being a direct FCC licensee, such as must-carry rights").

188. *Id.* at 304 (recommending that Congress consider dedicating spectrum proceeds to a trust fund "for the production, distribution, and archiving of digital public media," but making no similar provision for commercial broadcasters).

189. THE HISTORY OF PUBLIC BROADCASTING, *supra* note 19, at 7-9; ENGELMAN, *supra* note 164, at 36.

190. Innovation in the Broadcast Television Bands: Allocations, Channel Sharing and Improvements to VHF, *Notice of Proposed Rulemaking*, FCC 10-196, ET Dkt. No. 10-235 (Nov. 30, 2010), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-196A1.pdf.

191. *See, e.g.*, Public Safety Spectrum and Wireless Innovation Act, S. 3756, 111th Cong. (2010); Voluntary Incentive Auctions Act of 2010, H.R. 5947, 111th Cong. (2010); Spectrum Measurement and Policy Reform Act, S. 3610, 111th Cong. (2010).

CONCLUSION

Not all of the changes in structure, governance, policy, and practice that are necessary to support public service media networks of maximal service to connected communities are within the government's power to effect. Indeed, most of these changes are not. However, the government can play a critical role by leveraging the incentives it creates through funding and the spectrum resource. Policymakers can also provide leadership and vision for a decentralized and often fractious public service media community.

The first steps of recognizing the promise and elements of change have already been taken in the National Broadband Plan. It was important, for example, that the FCC for the first time referred to something called "public media," as opposed to public broadcasting. This change in terminology signified an understanding that what is needed, and what is developing to some extent, are interconnected networks of public service media entities and publics. These networks, making use of broadband capabilities, will be able at long last to meet the expectations of the Public Broadcasting Act of 1967. But they cannot do so without significant structural reform—changes in public service media structure, governance, policy, and practice that are necessary to enable public service media networks to be of maximal service to connected communities. This reform will require Congressional action, as well as innovation in the field of public service media.

IS THE SKY FALLING ON THE CONTENT INDUSTRIES?*

MARK A. LEMLEY**

Are the content industries doomed? They certainly seem to think so. The music industry tells us, as their revenues decline because of file sharing, "we can't compete with free," and so we're history. No one is going to create new music anymore. The video industries seem to be getting in on the act, too. They've showed up behind closed doors in Washington, D.C. to complain about the prospect of a national broadband plan, because broadband is simply going to make it easier for people to pirate video over the Internet. "We've got to do something about it," they tell us, "or no one is going to make movies anymore."

And now, as you've read from Mark Cooper, newspapers are in on the act as revenues decline.[1] Print journalism is dying, people are leaving the business in droves because "we can't compete with free." Though here, curiously, the free is their own free. The complaint of the newspapers is that they can't compete with themselves putting their own material on the Internet for free.

This sounds like a pretty alarming story. But this is not the first time the content industries have told us that they face imminent disaster. I sometimes suspect there was an association of monastic scriveners who protested the printing press on the theory that it was going to destroy the beautiful hand illumination of manuscripts. Which, of course, it did. But, it did not, as a result, destroy the book industry. In fact, it rather expanded that industry.

I do know that artists in the 19th century complained about photographs because who was then going to pay them to paint portraits of people? Who's going to want photorealistic artistic portrayals of landscapes if you can just have a machine do the same thing? Artists, we

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1. Mark Cooper, *Structured Viral Communications: The Political Economy and Social Organization of Digital Disintermediation*, 9 J. TELECOMM. & HIGH TECH. L. 38 (2011).

were told, would be driven out of the profession in droves, and art would wither and die.[2] Photography did, of course, change the art world. But it arguably changed it for the better. And in any event, the benefits of the addition of the camera to the repertoire of art surely outweigh the costs.

Moving into the 20th century, the claims about technology as a threat to content came fast and furious. The threats in the first decades of the 20th century were the player piano and the gramophone. John Philip Sousa wrote an article, *The Menace of Mechanical Music*,[3] in which he argued that those infernal devices were a "threat to his livelihood, to the entire body politic, and to 'musical taste' itself. . . . The player piano and the gramophone [ ] strip[ ] life from real, human, *soulful* live performances."[4] And he articulated an argument that is going to sound familiar to any of you who have been in the copyright industry:

> Do they not realize that if the accredited composers, who have come into vogue by reason of merit and labor, are refused a just reward for their efforts, a condition is almost sure to arise where all incentive to further creative work is lacking, and compositions will no longer flow from their pens . . . ? What, then, of the playing and talking machines?[5]

In other words, without some way for musicians to continue to get paid as they had been paid before (by selling sheet music), no one will create content.

Interestingly, Sousa's concern was not with professional content creators. Notwithstanding the previous passage, his real concern was that amateur music-making was threatened by the rise of a professional musical class that could lead to the rampant destruction of the country. He wrote,

> [u]nder such conditions the tide of amateurism cannot but recede, until there will be left only the mechanical device and the professional executant. Singing will no longer be a fine accomplishment; vocal exercises, so important a factor in the curriculum of physical culture, will be out of vogue! Then what of the national throat? Will it not weaken? What of the national chest? Will it not shrink?"[6]

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2. Painter Paul Delaroche reportedly declared, on seeing his first daguerreotype, "From today painting is dead." STEPHEN BANN, PAUL DELAROCHE: HISTORY PAINTED 9 (1997).

3. John Philip Sousa, *The Menace of Mechanical Music*, 8 APPLETON'S MAG. 278 (1906).

4. Nate Anderson, *100 Years of Big Content Fearing Technology – In Its Own Words*, ARS TECHNICA, Oct. 11, 2009, http://arstechnica.com/tech-policy/news/2009/10/100-years-of-big-content-fearing-technologyin-its-own-words.ars.

5. Sousa, *supra* note 3, at 284.

6. *Id.* at 281.

The worry was that amateur musicians would disappear, taken over by professionals who could afford to produce music using this technology.

Did we destroy the music industry by introducing the gramophone? Not so much.

In fact, 20 years later, the next imminent threat to the demise of the content industries came from radio. Curiously, the threat from radio was that it was going to steal the very revenues that that gramophone industry had in the previous 20 years generated for musicians. Nonetheless, because radio is available for free to all, because no one charges for it, we started to hear the emergence of the argument that you can't compete with free. If radio is allowed, the argument went, pirate radio will destroy the music industry because who would buy music with real money when they could just listen to it on the radio for free?

That turned out also to be not so true. It seems that perhaps you *can* compete with free.[7] Certainly consumers starting in the 1920s were perfectly happy to buy music notwithstanding the availability of that very music on the radio for free.

Switching channels to the video industry, by the late 1950s and the 1960s, the television industry was threatened by another bogeyman that was going to destroy television. The existing business model was providing broadcast television for free; the threat was cable television. Note the irony here. The argument was not that paid content can't compete with free, the argument is *free* content can't compete with *paid*. If we don't shut down the cable television industry, no one will bother to produce new television shows, and there won't be anything to go on cable. This is an argument that made it all the way to the United States Supreme Court in the *Fortnightly* case[8] and led to a decision that brought us within two votes of shutting down the cable television industry unless it had the permission of the television broadcasters.[9]

Ironically, of course, not only did we not shut down television as a result of introducing cable television, it is now broadcast stations who fight to get on cable networks, going to court again to demand that they be included on cable television because that will expand their market.[10]

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7. As Mike Masnick put it, "saying you can't compete with free is saying you can't compete period." (Mike Masnick, Saying You Can't Compete With Free Is Saying You Can't Compete Period, TECHDIRT (Feb. 15, 2007, 12:41 PM), http://www.techdirt.com/articles/20070215/002923.shtml).

8. Fortnightly Corp. v. United Artists Television, Inc., 392 U.S. 390 (1968).

9. The district court and the court of appeals had held cable television to be copyright infringement. Five Supreme Court Justices voted to reverse that decision, but only six participated in the case. *Id.* at 402.

10. *See* Turner Broad. Sys., Inc. v. FCC, 520 U.S. 180 (1997) (upholding the constitutionality of a law that required cable companies to carry local broadcast television on their wires, finding that without the law many of them would not have done so).

By the 1970s the big action was in the photocopier. The photocopier, like the printing press, the camera, the record player, radio, and cable television, permitted people to replicate things they would otherwise have to pay for, namely books. No less an authority than Melville Nimmer, the leading copyright scholar, wrote, "the day may not be far off when no one need purchase books."[11] That was in 1972. So the copyright industries tried to shut down the photocopier; suing in the *Williams & Wilkins* case to try to prevent the widespread copying by federal government institutions of books and journal articles.[12] Again the content industries made it to the Supreme Court and were barely foiled, here by an equally divided Court.[13] The photocopying of journal articles was (barely) allowed.

Books and journal articles did not disappear in the early 1970s. Instead they seemed to thrive during that time, notwithstanding the existence of a technology that allows people to take them for free.

By the late 1970s we get to the example that is perhaps the most familiar: the VCR. The free television model, augmented by cable, had been established for some time. Along came a technology that allowed people to copy this freely provided television content and do what they wanted with it. The content industry warned us that the VCR must be stopped. Here is Jack Valenti of the MPAA, speaking to Congress:

[T]he VCR is stripping . . . those markets clean of our profit potential, you are going to have devastation in this marketplace. . . . We are going to bleed and bleed and hemorrhage, unless this Congress at least protects one industry that is able to retrieve a surplus balance of trade and whose total future depends on its protection from the savagery and the ravages of this machine.[14]

If that were not enough, he went on to say, "I say to you that the VCR is to the American film producer and the American public as the Boston strangler is to the woman home alone."[15] The industry's position was that if Congress didn't shut down the infernal machine that was the VCR, if they didn't prevent people from making copies, no one would make movies.

This argument carried the day in the Ninth Circuit, which held the

11. *Copying v. Copyright*, TIME, May 1, 1972, at 62 (quoting Melville Nimmer).

12. Williams & Wilkins Co. v. United States, 487 F.2d 1345 (Ct. Cl. 1973) (en banc), *aff'd by an equally divided court*, 420 U.S. 376 (1975).

13. Williams & Wilkins Co. v. United States, 420 U.S. 376, 376 (1975).

14. *Home Recording of Copyrighted Works*: *Hearings on H.R. 4783, H.R. 4794, H.R. 4808, H.R. 5250, H.R. 5488, and H.R. 5705 Before the Subcomm. on Courts, Civil Liberties, and the Admin. of Justice of the H. Comm. on the Judiciary*, 97th Cong. 8 (1982) (testimony of Jack Valenti, President, Motion Picture Association of America, Inc.).

15. *Id.*

VCR illegal.[16] It then went to the Supreme Court, which heard the case twice. The Court was at first inclined to affirm the Ninth Circuit's conclusion and ban the VCR, but ultimately decided, by a 5-4 vote, that the VCR was okay.[17]

Did content suffer as a result? Not exactly. In fact, it turns out that through the 1980s and 1990s it was the very VCR and its successor, the DVD player, which were going to destroy the broadcast and movie industries, that kept them alive, generating $30 billion in revenues by 2002 for the industries.[18]

Back on the audio front, at about the same time, the content industry was concerned about audio cassettes. The gramophone records, which themselves didn't destroy the industry, and which survived the ravages of radio, were now threatened by audio cassettes because people could tape music off the radio. While listening to the radio for free turned out not to shut the music industry down, listening to the radio, taping the songs, and listening to those songs whenever you wanted to was certainly going to shut it down.

So, the industry started an ad campaign to try to shut down audio cassettes featuring a skull and crossbones in the shape of an audio cassette tape. The tag line was "Home Taping is Killing Music and It's Illegal."[19] But we didn't ban home taping, and it turns out that music sales continued to go up through the 1980s and the 1990s, notwithstanding the threat of home taping and the possibility that people could have for free what they otherwise would have to pay for.[20]

16. Universal City Studios, Inc., v. Sony Corp. of Am., 659 F.2d 963, 976 (9th Cir. 1981) ("The district court determined that an injunction would not be an appropriate remedy. The court should reconsider this action." (internal citation omitted)).

17. Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 456-57 (1984).

18. DIGITAL HOLLYWOOD, KEYNOTE SPEAKER BIO, WARREN LIEBERFARB (2005), *available at* http://www.digitalhollywood.com/%231DHFall05/DVDOne.html.

19. For a collection of this and many other fabulous examples, *see* Anderson, *supra* note 4.

20. In fact, the 1980s began a dramatic expansion of music sales that continued until the late 1990s, when the number of albums sold began to decline as consumers switched to digital music. Press Release, Bridge Ratings, U.S. Music Consumption: How Many Are Buying & Who's Listening? (Aug. 29, 2007), http://www.bridgeratings.com/press_08.29.2007-MusicConsumption.htm.

We did, however, successfully shackle the next-generation of audio technology in the early 1990s with the digital audio tape. Here the perceived threat was the same as audio cassettes but worse. Audio cassettes turned out not to have shut down the industry, true. But if you gave customers *digital* audio cassettes, content owners warned, if you allowed them to make a digital-quality copy, then they had no reason to buy our better quality copy, and we will be shut down. That argument carried the day in Congress. Digital audio tapes were then subject to a compulsory licensing scheme and were never heard from again by mass-market consumers.[21] The technology flopped once it was put under the control of the content industry.

By the late 1990s the same arguments were made against the latest digital scourge, the MP3 player. We have to shut down the MP3 players, we were told, because the Rio, Diamond Multimedia's first-generation player, was designed to undermine the creation of a legitimate digital distribution marketplace. The MP3 player threatened to provide digital content when consumers wanted it. Consumers who could create their own digital content from their CDs wouldn't buy digital content from the content industries—not that those industries were actually offering digital content at the time, but just in case they wanted to in the future.

So the music industry sued to shut down the MP3 player. That suit failed in the 9th Circuit in the *RIAA v. Diamond Multimedia* case.[22] MP3 players took off, and people started to load them with content. And yes, it is true that a lot of that content was unlawfully copied, but the owners of MP3 players also spent a lot of money buying CDs at the end of the 1990s. But then along came Napster, which, the RIAA told us once again, was going to shut down the music industry. Digital music must be

21. 17 U.S.C. §§ 1001-1007 (2006).

22. Recording Indus. Ass'n of Am. v. Diamond Multimedia Sys., Inc., 180 F.3d 1072 (9th Cir. 1999). Ironically, the suit failed because the court concluded that MP3 players were immunized by a provision in the Copyright Act, 17 U.S.C. § 1008, passed in 1992 as part of an effort to regulate digital audio tape, which created a home taping exemption to copyright infringement. *Id.* at 1079.

stopped. The RIAA fought a delaying action for years to try to do this, but they ultimately lost. They did win their individual cases; they shut down Napster[23] and they later shut down Grokster[24] and Limewire.[25] They did not shut down digital music distribution. When, a decade later, they ultimately gave in and offered it, it turned out people were actually willing to buy their digital music. In April 2008, Apple surpassed Wal-Mart as the largest retailer of music in the country.[26] And by 2008, there were more legal music sales of all types than ever before in history; 70% were digital downloads.[27] Digital music in general is not in fact the threat it seemed to be.

Meanwhile, back in the video space, the world had moved on to DVRs. VCRs, well, maybe they didn't turn out to be that bad—maybe they actually helped us a lot—but digital video recorders, those are really bad. DVRs were really bad, we were told, because people were going to skip the commercials. The CEO of Turner Broadcasting, Jamie Kellner, said of the DVR and commercial skipping, "It's theft. Your contract with the network when you get the show is you're going to watch the spots. Otherwise you couldn't get the show on an ad-supported basis. Any time you skip a commercial . . . you're actually stealing the programming."[28]

Notwithstanding the rampant theft by bathroom-goers everywhere, and the success of the video industry in shutting down RePlayTV, the first entrant into this market,[29] TiVo succeeded, and, it turns out, didn't destroy the television industry. Instead, it revitalized that industry because a lot of people like me who didn't watch television suddenly discovered that when they could choose when and where they wanted to see their programming, there was actually a bunch of good stuff on. And the 2000s became the Golden Age of television.

There are examples going on right now as well. Digital radio is my personal favorite because the original pirates in the radio industry are now trying very hard to shut down competition by digital and Internet radio, the next generation of pirates. Digital television is another example; the FCC told us on the basis of representations by the TV

23. A&M Records, Inc. v. Napster, Inc., 239 F.3d 1004, 1027 (9th Cir. 2001).

24. Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd., 545 U.S. 913, 941 (2005).

25. Arista Records LLC v. Lime Group LLC, No. 06 CV 5936 (KMW), 2010 WL 2291485, at *8 (S.D.N.Y. May 25, 2010).

26. Press Release, Apple, iTunes Store Top Music Retailer in the US (Apr. 3, 2008), http://www.apple.com/pr/library/2008/04/03itunes.html.

27. Ken Barnes, *Music Sales Boom, but Albums Fizzle*, USA TODAY, Jan. 2, 2009, at 6D.

28. Anderson, *supra* note 4 (quoting Staci D. Kramer, *Content's King*, CABLEWORLD, Apr. 29, 2002).

29. *See* Newmark v. Turner Broad. Network, 226 F. Supp. 2d 1215 (C.D. Cal. 2002). The case against SONICBlue, the maker of the RePlayTV, settled without an opinion when the company was driven into bankruptcy. *See* Paramount Pictures Corp. v. RePlayTV, 298 F. Supp. 2d 921 (C.D. Cal. 2004).

industry that in the absence of some protection mechanism, high-value content would be withheld from broadcast television and would migrate to pay services. Notwithstanding this claim, we did ultimately, after a 22-year odyssey, move to digital television in 2009. Perhaps television and radio are now doomed too, but I'm not holding my breath. Pornographers complain of a once-lucrative market now flooded by amateur pornography; even sex fears it can't compete with free.[30] But I wouldn't list "lack of sufficient pornography" as among our larger societal problems.

The content industry, it seems, has a Chicken Little problem.

It may, in fact, be the case that this time the sky *is* falling. But, if you claim that the sky is falling whenever a new technology threatens an existing business model, the rest of the world can be forgiven for not believing you when you claim that this time around it's going to be different. Now, let's be clear, each of these technologies changed the business model of the industry. They caused certain revenue streams to decline. But they also opened up new ones.

So how is the content industry going to survive? Let me offer a few suggestions:

First off, what won't work.

I think it is pretty clear that shutting down the technology doesn't work. Whenever you succeed in shutting down a technology that people want, companies develop a different technology that responds to that market demand.

Locking down the technology doesn't usually work either. Almost every time we impose digital rights management, as we did with computer dongles, or digital audio tape, or the Sony minidisc, or the DivX alternative to the DVD player, or the DRM in digital music, either the technology or the digital rights management fails because the controls are inconvenient and they get in the way. In the rare instances in which a locked-down technology succeeded (the DVD is the prime example), it is because the technology was so much better than the status quo that people would tolerate some inconvenience. And even then, it is worth noting that the technology that won the standards competition was the less restrictive of the two possible technologies.

None of this is to suggest that copyright law has no role to play. In many of the examples I've given, the technology ultimately came within the purview of copyright law, often with some sort of compulsory or collective license that allowed copyright owners to get paid without shutting down the technology or bringing the full weight of copyright

30. Kal Raustiala & Chris Sprigman, *Copyright Infringements in the Porn Industry*, FREAKONOMICS BLOG (May 5, 2010, 12:00 PM), http://freakonomics.blogs.nytimes.com/2010/05/05/copyrighting-porn-a-guest-post.

remedies to bear. Cable and satellite television ended up with a compulsory license, for instance;[31] radio got a government-supervised but privately-organized collective licensing regime[32] as well as an exemption from having to pay sound recording copyright owners.[33] But the general lesson is that "mother, may I?" innovation regimes in which no one can develop a new technology unless they get the collective permission of all the content owners whose content might be distributed with that technology are not going to work.

Nonetheless, I think there are a number of circumstances and business models that are worth some serious exploration as at least partial solutions.

One is advertising. Now, I think that advertising has its limits as a business model. The current trend seems to be "alright, we'll make everything available for free since that seems to be what we have to do, but we'll make it up in advertising." There is a substantial amount of advertising revenue that can be found online—ask Google—but there are also limits to that business model. If the only people advertising are other content owners counting on advertising for their free products, the revenue has got to be coming from somewhere.

More important are lowered production costs. Mark Cooper talked about this eloquently.[34] I won't go in to more detail here except to point out that the digital revolution in the last decade has led to the largest-ever increase in the amount of content available in the world. We get far more video content because of YouTube than we have ever had before. We get far more text content because of blogging than we have ever had before. We get that new content because it is much easier and cheaper to make and distribute it. Now cheap production and distribution won't necessarily give us all the kinds and quality of content we want. But they give us an enormous array of content to choose from that wasn't available in a world in which all content had to be professionally produced, packaged into a disk, and shipped around the world in a truck.

Third, technology can change people's relationship to content in ways that can make a profit. You also see technological advances redounding to the benefit of content industries in various respects. If you have not seen *Avatar*, you should. And if you are going to see *Avatar*, you should absolutely see it in 3-D in a movie theatre because the experience you have at home will not be the same experience. Not

31. 17 U.S.C.S. §§ 111, 119 (2010).

32. *See* United States v. Am. Soc'y of Composers, Authors & Publishers, No. 13-95, 1941 U.S. Dist. LEXIS 3944 (S.D.N.Y. Mar. 4, 1941).

33. 17 U.S.C.S. § 114 (2010).

34. Cooper, *supra* note 1, at 28-30.

surprisingly, *Avatar* is the highest-grossing movie ever,[35] and helped make 2009 the best financial year ever for the movie industry.[36]

Business models can also build on the experiential relationships that people have with content. People don't go see movies—at least good movies—and then stop thinking about them. People want to be engaged with their content. They want to have connections with the musicians they like. They want to go to concerts and experience music live. They want to engage in an ongoing relationship, and there's revenue there to be had by meeting that demand—providing that collaborative experience can be lucrative. You don't have to worry nearly as much about piracy if you are a maker of a massive multiplayer online role-playing game because the point of the game is largely the experience of interacting with all of the other people in the game. If you play a pirated version of World of Warcraft, you do not get the same experience as if you play World of Warcraft, because you aren't interacting with the people playing the official version.

One of the things content owners have lost in the digital world is the first-mover advantage. The duration of the advantage of being the first in the market with a product has gotten a lot shorter, as it is now much easier to copy things. But first-mover advantages do still exist, and companies can capitalize on them through branding. You can build a substantial revenue model out of having a brand and having a reputation for quality content, even if there are others providing competing content.

Companies can also make money by providing convenience to users. It turns out that many of the people who take content for free are often people of low socio-economic status; they're young, they're students. People who have substantial means often pay for things—even things that they could get for free. There's a Web comic called XKCD that actually makes a living selling books and T-shirts of the comics that it makes available online for free.[37] Why is this? Because if you really like XKCD—and you should—you're willing to pay to have a physical book in your hand or to wear a T-shirt.

In the news media, too, I think there are revenue models to be had that spring from this explosion of content. Because the explosion of content comes with a wide array of quality from very good to very bad, there are business models to be had in enabling people to figure out what

35. Shadra Beesley, *'Avatar' Sinks 'Titanic' Best-Selling Record*, MONEYBLOG (Jan. 26, 2010), http://personalmoneystore.com/moneyblog/2010/01/26/avatar-sinks-titanic-bestselling-record.

36. Press Release, Motion Picture Association of America, Inc., Worldwide Box Office Continues to Soar; U.S. Admissions on the Rise: 3D Gives a Boost to Box Office Growth (March 10, 2010), http://www.mpaa.org/resources/756f90f0-f982-49d7-9f02-35da3773cc8c.pdf (on file with Journal on Telecommunications and High Technology Law).

37. XKCD Store, http://store.xkcd.com (last visited Oct. 16, 2010).

is desirable and what is not, what is trustworthy and what is not. The role of the media may become, in part, a credentialing role, one that says this is, in fact, information that you can trust; this is, in fact, a video you will like. And that's a service for which people will pay even though the underlying content is free.

It may even be the case that copying drives creativity in unusual ways. Kal Raustiala and Chris Sprigman have suggested that the fashion industry benefits from the absence of copyright protection, because knock-off fashions serve both to popularize the original ones and eventually to drive demand to replace them.[38] Both dynamics may work in other content industries. Up-and-coming musicians may like piracy if it builds their name recognition, and it may be that the growing availability of content actually spurs an increase in demand for that content.

This is just a smattering of examples: Mike Masnick and Chris Anderson have spent some time documenting a number of ways people already make money from free content.[39] And it is worth noting that what we want from copyright protection is a continual supply of new content. If that content increasingly comes from amateurs as well as professionals, there's nothing wrong with that. It might even make John Philip Sousa proud.

Let me be clear: I don't know what the future of content business models is going to look like. I could do worse, however, than to turn to the words of Marc Norman and Tom Stoppard in the Oscar-winning movie *Shakespeare In Love*:

> **Henslowe**: Mr. Fennyman, let me explain about the theatre business. The natural condition is one of insurmountable obstacles on the road to imminent disaster. Believe me, to be closed by the plague is a bagatelle in the ups and downs of owning a theatre.
> **Fennyman**: So what do we do?
> **Henslowe**: Nothing. Strangely enough, it all turns out well.
> **Fennyman**: How?
> **Henslowe**: I don't know. It's a mystery.[40]

I don't know exactly how it will turn out, what the future of content industry will be. But I am quite confident that there will, in fact, be one.

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38. Kal Raustiala & Christopher Sprigman, *The Piracy Paradox: Innovation and Intellectual Property in Fashion Design*, 92 VA. L. REV. 1687, 1733 (2006).

39. Mike Masnick, *The Future of Music Business Models (And Those Who Are Already There)*, TECHDIRT (Jan. 25, 2010, 10:18 AM), http://www.techdirt.com/articles/20091119/1634117011.shtml; CHRIS ANDERSON, FREE: THE FUTURE OF A RADICAL PRICE (2009).

40. MARC NORMAN & TOM STOPPARD, SHAKESPEARE IN LOVE 23 (1998).

THE RESILIENCE PRINCIPLES: A FRAMEWORK FOR NEW ICT GOVERNANCE

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INTRODUCTION

Modern information and communication systems are enormously intricate and dynamic. Almost everyone has a stake in their successful operation, and the urge to regulate is irresistible. However, this complexity means that the basis for taking regulatory action—let alone the precise policies to be deployed—is a very knotty problem. Decision-makers operate in a world of complexity, contradiction, and confusion. They never have all the data they would like to make a decision, and the information they do have is often inconsistent. Consequently, it is not clear what is happening, and it is not clear what to do about it.

The relentless change in the communications industry has generated a long slate of new policy proposals and continues to prompt new ideas. The question that arises is: Are any new principles emerging that can guide policymakers through the tangle of bottom-up proposals? The meetings held under the "New Models of Governance" project of the Silicon Flatirons Center addressed many burning topics;[1] however, no overarching themes were immediately apparent.[2]

This article analyzes the forces that are driving change in information and communication technologies ("ICT"), and advocates for a new governance approach appropriate for the situation. It provides a framework for action (and forbearance) that reflects the underlying system dynamics, balances conflicting interests, and maximizes the social benefits of the Internet/Web.[3, 4] This approach uses principles-based policymaking to bridge from day-to-day contingencies to long-term policy plans and advances four "Resilience Principles": flexibility, delegation, big picture, and diversity.

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1. *See New Models of Governance Project, Toward Policy 3.0*, SILICON FLATIRONS, http://www.silicon-flatirons.org/initiatives.php?id=governance (last visited Dec. 10, 2010).

2. Pierre De Vries, *New Governance for the Internet: Findings, Taxonomy and Model* 2 (Working Paper Series, 2010), *available at* http://ssrn.com/abstract=http://ssrn.com/abstract=1597373 [hereinafter *New Governance*].

3. The approach was developed and is applied to the Internet/Web, but it applies more generally to any policy problem that involves an intricate and evolving interplay of social, technical, and commercial forces.

4. I use the term "Internet/Web" to highlight that one needs to consider both engineering-focused data transport (one of the main connotations of "the Internet") and human-centered activities ("the Web") in order to fully understand today's communication landscape. In this essay, Internet/Web and ICT are used interchangeably.

In recent years, a small but growing number of voices have called for the application of systems thinking to Internet/Web governance. For example, in 2004 Marco Iansiti and Roy Levien proposed an ecosystem as a model for business in general and the information technology industry in particular.[5] Similarly, in 2005 Steven Berlin Johnson likened the Web to a rain forest.[6] In June 2007, a group of business strategists, regulators, and academics at the Rueschlikon Conference[7] seized on the metaphor of gardening as a model of how governance of information in a global economy might deal with the difficulty of predicting how a system will evolve and change.[8] Three papers at TPRC 2008[9] provided ways of analyzing the communications scene from a systems perspective: Rick Whitt and Stephen Schultze proposed a new conceptual framework based on what they dubbed "emergence economics";[10] Linda Garcia and Ellen Surles analyzed the media-ownership policy field in terms of

5. It is not clear to what extent the metaphor should be taken seriously as a model of the system. Iansiti and Levien note that they "are not arguing here that industries *are* ecosystems or even that it makes sense to organize them *as if they were*, but that biological ecosystems can serve as a source of vivid and useful terminology as well as provide specific and powerful insights into the different roles played by firms." MARCO IANSITI & ROY LEVIEN, THE KEYSTONE ADVANTAGE: WHAT THE NEW DYNAMICS OF BUSINESS ECOSYSTEMS MEAN FOR STRATEGY, INNOVATION, AND SUSTAINABILITY 9 (2004) (emphasis in original).

6. Steven Berlin Johnson, *Why the Web is like a Rain Forest*, STEVENBERLINJOHNSON.COM (Oct. 3, 2005) http://www.stevenberlinjohnson.com/2005/10/why_the_web_is_.html (Berlin Johnson argues that the difference between Web 2.0 and previous technology generations is like the difference between a rain forest and a desert. Information absorption efficiency of Web 2.0 is dramatically higher, just as a rain forest is more efficient than a desert at using energy because there are so many organisms exploiting every tiny niche of the nutrient cycle.).

7. Since 2001, The Rueschlikon Conferences on Information Policy in the New Economy has brought together 40 top-level experts from around the globe to focus on the most pressing policy debates of the global information society, attracting participants from business, government regulators, and academia from four continents. *See Public Area*, RUESCHLIKON CONFERENCE, http://www.rueschlikon-conference.org/r2007/public/public_all.php?pub_id=0 (last visited Aug. 21, 2010).

8. *See* KENNETH CUKIER, GOVERNANCE AS GARDENING: A REPORT OF THE 2007 RUESCHLIKON CONFERENCE ON INFORMATION POLICY (2007). Participants variously observed that regulatory perspectives need to be reconstructed as a game played by agents in a network; that rule sets ought be defined at the lowest feasible level of granularity, with the recognition that significant emergent properties exist; that when innovation blossoms, it is usually unanticipated; and that there is a conflict of values between those who see weeds or wilderness in the same plot of land.

9. TPRC (formerly called The Telecommunications Policy Research Conference), founded in 1972, is a non-profit organization that hosts an annual forum for scholars and decision makers in the fields of telecommunications and information policy. *See About TRPC*, http://www.tprcweb.com/index.php?option=com_content&view=category&layout=blog&id=18&Itemid=29 (last visited Aug. 21, 2010).

10. Richard S. Whitt & Stephen J. Schultze, *The New "Emergence Economics" of Innovation And Growth, and What It Means for Communications Policy*, 7 J. ON TELECOMM. & HIGH TECH. L. 217, 223 (2009).

complex adaptive systems;[11] and I argued that the metaphor of Internet/Web governance as forestry—a managed complex adaptive system—could guide regulatory intuition in communications policy.[12]

This article is divided into three argument sections: Section I outlines the forces that are prompting new governance approaches. Section II argues that these changes can be understood in terms of attributes of complex adaptive systems. Section III presents the Resilience Principles that are derived from experience attempting to steer such systems in other contexts, notably ecosystem management. Finally, Section IV discusses simulation and common-law reasoning as two useful tools for converting the principles into practice, and the last section summarizes my conculsion.

I. CHANGES THAT PROMPT NEW GOVERNANCE

Any change in policy has unintended consequences, and some of them will be adverse. This prompts the question: Which characteristics (if any) of 21st century communications justify, or impel, a change in methods of governance?

Many examples have been put forward for the types of changing circumstances that justify new Internet regulation.[13] This section considers six: modularity, convergence, decentralization, the "third sector," tempo, and scale. I argue that the first three represent cyclical changes, while the latter three are step changes.

A. Modularity

A *module* is a separable part of a larger collection of components that constitute a functional system. Modularity is the design philosophy that builds functionality out of partial, separable, and substitutable components.

Substitutability requires a well-defined interface between modules.

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11. Dr. Linda Garcia & Ellen Surles, *The Rise and Fall of Media Ownership Issues: A Network Perspective of the Policy Field* (2008), *available at* http://dlindagarcia.com/wp-content/uploads/tprc-entry.doc.

12. Pierre De Vries, *Internet Governance as Forestry: Deriving Policy Principles from Managed Complex Adaptive Systems* (Working Paper Series JEL 038, 2008), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1229482 [hereinafter *Governance as Forestry*].

13. *See, e.g.,* PETER F. COWHEY & JONATHAN D. ARONSON, TRANSFORMING GLOBAL INFORMATION AND COMMUNICATION MARKETS 17 (2009) (citing three factors that will force change: (1) the modular mixing and matching of technology building blocks; (2) the need to span traditional policy and jurisdictional divides (i.e., convergence); and (3) the need to rely more on non-governmental institutions to coordinate and implement global policy). In *Governance as Forestry*, *supra* note 12, I cite three characteristics of the Internet that require new responses: modularity, decentralized self-organization, and rapid change.

Such an interface definition need not be public; a vertically integrated firm may make extensive use of modularity while keeping the interfaces private. A more limited definition of modularity insists that interoperation crosses the boundary of the private firm; for example, Professors Joseph Farrell and Philip J. Weiser stipulate that "[m]odularity means organizing complements (products that work with one another) to interoperate through public, nondiscriminatory, and well-understood interfaces."[14]

ICT modules include as follows: network connections like a wired Ethernet link or a cellular data service; directories, from the DNS to sites like alluc.org, that organize links to other resources; Web browsers; voice-over IP ("VoIP") functionality used in a free-standing application like Skype or as part of a communications suite like Microsoft Office; a Twitter or Facebook plug-in on a Web page; and a pay-per-view subscription to a video channel that can be delivered via cable, phone, or satellite company.

Modularity complicates regulation since it often leads to large numbers of diverse industry players that complicate the ability to reach a consensus and implement solutions. In the days of the Bell System,[15] a small elite spanned the regulatory and operational divide and could quickly agree on what had to be done and how best to do it. For example, system engineers might have instinctively cooperated with law enforcement to provide surveillance even when the statutory situation was vague.[16] Today there are many more points to monitor on the Internet, and the engineers with the ability to do so are not always cooperative. Further, a third of them are not even American.[17] Rules that used to be unwritten now have to be codified, with all the political

14. Joseph Farrell & Philip J. Weiser, *Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age,* 17 HARV. J.L. & TECH. 85, 95 (2003).

15. The Bell System was the American Bell Telephone Company—an AT&T-led organization that provided telephone service in the United States from 1877 to 1984, at various times as a monopoly. In 1984, a federal mandate broke the company up into separate companies. *See A Brief History: The Bell System*, AT&T, http://www.corp.att.com/history/history3.html (last visited Aug. 21, 2010).

16. In modern times, sometimes they still do, particularly for the National Security Agency after 9/11. *See, e.g.*, Eric Lichtblau, *Senate Approves Bill to Broaden Wiretap Powers,* N.Y. TIMES, July 10, 2008, at A1; s*ee also* Christopher Soghoian, *Caught in the Cloud: Privacy, Encryption, and Government Back Doors in the Web 2.0 Era*, 8 J. ON TELECOMM. & HIGH TECH. L. 359, 383-98 (2010) (discussing modern Internet surveillance practices by government entities).

17. Data compiled by NationMaster.com from the CIA World Fact Book indicates that 57 percent of Internet hosts were in the U.S. in 2008. *See Host Statistics – Countries Compared*, NATIONMASTER.COM, http://www.nationmaster.com/graph/int_hos-internet-hosts (last visited July 10, 2010).

infighting and unintended side effects that this entails.[18]

Modular technology is not a unique characteristic of the Internet. The standardization of interchangeable parts dates back at least to Eli Whitney's process for manufacturing muskets for the U.S. government in 1798.[19] There is even evidence for the standardization of designs and technological operations in the making of Stone and Bronze Age arrowheads.[20] More recently, there have been a number of periods in the last century when innovators could combine or recombine component parts to create new products, such as vacuum tubes in the 1920s and integrated circuits in the 1970s.

I doubt that interoperable modularity[21] will persist as a defining characteristic of communications. Modular technology does not lead inescapably to a modular industry structure. Standard parts did not render pre-Internet industries immune to antitrust problems, and it is unlikely they will do so now. The role of modularity in the relationships between companies waxes and wanes, depending on, rather than driving, industry consolidation and market power. Consequently, it is likely that interoperable modularity will decline in the coming decade. The Web 2.0 phenomenon of the mid-2000s with its catch phrases like "remixing" and "participation" likely represented the high-water mark of interoperable modularity.[22] The tide will recede slowly, but it is becoming clear that key assets of the Web, such as the massive data sets held by Google, eBay, Facebook, and others, have proprietary value and will thus not be made interoperable.[23] Furthermore, the cumulative success of Apple's proprietary products in the late 2000s (the iPod,

18. Letter from Jonathan Grudin, Researcher, Microsoft Corp., to Pierre De Vries (Jan. 2, 2008) (on file with author). Grudin observes that technology unmasks inconsistencies between rules and practice. Rules such as laws, policies, procedures, and norms enshrine how we believe people should, and conventionally do, behave. In practice, there are many rule violations, and cases of uneven enforcement that lead to the "right" outcome when rules are "obviously" inapplicable. As technology is more deeply integrated into lives, it exposes ever more deviations between rules and practice.

19. *See* Robert S. Woodbury, *The Legend of Eli Whitney and Interchangeable Parts,* 1 TECH. & CULTURE 235, 236 (1960).

20. *See* M.G. Zhilin, *Technology of the Manufacture of Mesolithic Bone Arrowheads on the Upper Volga*, 1 EUR. J. ARCHAEOLOGY 147, 149 (1998); *see also* Heidi Luik, *For Hunting or for Warfare? Bone Arrowheads from the Late Bronze Age Fortified Settlements in Eastern Baltic*, 10 EST. J. ARCHAEOLOGY 132, 138 (2006).

21. That is, modularity in the sense of Farrell & Weiser, *supra* note 14, based on public interoperability interfaces.

22. Tim O'Reilly, *What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Software*, O'REILLY.COM (Sept. 30, 2005) http://oreilly.com/web2/archive/what-is-web-20.html; *see also* Pramant Sharma, *Core Characteristics of Web 2.0 Services*, TECHPLUTO (Nov. 28, 2008) http://www.techpluto.com/web-20-services.

23. Kenneth Cukier, *Data, Data Everywhere: A Special Report on Managing Information*, ECONOMIST, Feb. 27, 2010, at 3.

iPhone, and iPad) are underlining the value of a non-interoperable paradigm.[24]

B. Convergence

The digital convergence argument[25] is true enough, but tired. The overlap of broadcasting, telecom, and intellectual property regulation brought about by common digital formats will undoubtedly require regulatory retooling, but I doubt the result will be the abolition of regulatory categories based on commercial and technological realities. The erasing of old structures and the emergence of new ones are symptoms of the reorganization of any system after a collapse. For example, after a fire or storm wipes out a forest, the old niches are replaced by new ones. The reorganization is inevitably followed again by growth, maturity, and then ultimately another collapse and restructuring.

The current blurring of categories is a temporary phenomenon, and eventually the "human rage to classify"[26] will reassert itself. Classification is essential to the regulatory method, where any new problem must be fitted into some existing category in order to apply the rules of that category.[27] Once a regulator can fit a new service into a category, regulatory action follows automatically; one does not have to go back to first principles in every case. While this mechanism may yield strange results in times of transition, it is efficient and expedient and will persist even as categories change.

Today, new regulatory categories are still emerging. One alternative is based on the "layers model."[28] Another classification, judging by

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24. Steven Johnson, *Rethinking a Gospel of the Web*, N.Y. TIMES, Apr. 9, 2010, at BU1.

25. "As a truly global network providing instantaneous connectivity to individuals and services, the Internet has transcended historical jurisdictional boundaries to become one of the greatest drivers of consumer choice and benefit, technical innovation, and economic development in the United States in the last ten years." IP-Enabled Serv., *Notice of Proposed Rulemaking*, 19 FCC Rcd. 4863, WC Dkt. No. 04-36 (Mar. 10, 2004) at ¶1; for a short introduction to convergence, see JONATHAN E. NUECHTERLEIN & PHILIP J. WEISER, DIGITAL CROSSROADS: AMERICAN TELECOMMUNICATIONS POLICY IN THE INTERNET AGE 23-27 (2005).

26. I first heard the term used by Rohan Bastin, Associate Professor of Anthropology at Deakin University, in a Philosopher's Zone interview about Claude Levi-Strauss. Interview by Alan Saunders with Rohan Bastin, Assoc. Professor of Anthropology, Deakin University, at The Philosopher's Zone, A Tribute to Claude Levi-Strauss, *available at* http://www.abc.net.au/rn/philosopherszone/stories/2009/2765201.htm#transcript (Dec. 12, 2009). "The human rage to classify" is also a chapter title in F. ALLAN HANSON, THE TROUBLE WITH CULTURE: HOW COMPUTERS ARE CALMING THE CULTURE WARS 47 (2007).

27. As Bach and Sallet put it, "classifying different services is what regulators principally do." David Bach & Jonathan Sallet, *The Challenges of Classification: Emerging VOIP Regulation in Europe and the United States*, 10 FIRST MONDAY (July 4, 2005), http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1255/1175.

28. Kevin D. Werbach, *A Layered Model for Internet Policy,* 1 J. ON TELECOMM. AND

today's behemoths, might be based on industry structure, i.e., networks, cloud services, devices, and content, replacing the current silos of broadcasting, telecom, wireless, and cable.

As with modularity, however, technology is not destiny. Industry structure keeps changing, and vertical and horizontal integration waxes and wanes. In the 1980s, for example, cable companies used their infrastructure control—and thus, control of access to viewers—to take control of content producers. However, by the 1990s they had started to spin out their media operations, and by the mid-2000s they were back to pipe-only operation.[29] The recently proposed Comcast/NBC Universal merger may signify that the pendulum is once again beginning to swing back.[30]

C. Decentralization

A big change in communications systems in the last fifty years has been the conversion of centrally-administered, tightly controlled hierarchical systems to more open, distributed, modular systems. The Internet is no doubt much more decentralized than forebears such as the telephone network. It is by definition[31] an affiliation of many networks, and much of its processing is done "at the edges" rather than "in the middle."

While circuit-switched telecommunications had a small number of providers, often in a monopoly, there are tens of thousands of Internet entities.[32] Content is created at the edges of the network by a multitude of autonomous agents. Some providers are large companies, but a huge amount of content is created by individuals, blurring the distinction between producers and consumers. Additionally, the boundaries between

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HIGH TECH L. 37 (2002); Lawrence B. Solum & Minn Chung, *The Layers Principle: Internet Architecture and the Law* (U. S. D. Sch. L. Pub. L. and Legal Theory, Research Paper No. 55, 2003), *available at* http://ssrn.com/abstract=416263; Richard S. Whitt, *A Horizontal Leap Forward: Formulating a New Communications Public Policy Framework Based on the Network Layers Model*, 56 FED. COMM. L. J. 587 (2004).

29. *See, e.g.,* STEPHEN KEATING, CUTTHROAT: HIGH STAKES AND KILLER MOVES ON THE ELECTRONIC FRONTIER (1999); DAVID WATERMAN & ANDREW WEISS, VERTICAL INTEGRATION IN CABLE TELEVISION (1997); MEGAN MULLEN, THE RISE OF CABLE PROGRAMMING IN THE UNITED STATES: REVOLUTION OR EVOLUTION? (2003).

30. Cecilia Kang, *Merger Plans for Comcast, NBC Ignite Battle over Television Access*, WASH. POST, Dec. 4, 2009, at A1.

31. *See, e.g.*, *Internet*, OXFORD DICTIONARIES, http://oxforddictionaries.com/view/entry/m_en_us1258681 (last visited July 31, 2010).

32. P. FARATIN ET AL., COMPLEXITY OF INTERNET INTERCONNECTIONS: TECHNOLOGY, INCENTIVES AND IMPLICATIONS FOR POLICY 1, 22-24 (2007) (explaining that there are over 26,000 interconnecting entities on the Internet, with a growing diversity of interconnection contract types, including 60,000 interconnection arrangements, and relationships that have broadened from either peering or transit to complex blends, like paid peering and partial transit).

systems are porous, as illustrated by jurisdictional arguments that cross boundaries that are both physical (between countries) and conceptual (between the physical world and "cyberspace").

There is a relationship between a decentralized architecture and modularity: modularity allows decentralization and is amplified by it. Consequently, because a large and increasing amount of modularity will not be a persistent attribute of the 21st century communications industry, decentralization will not persist and grow without end either. The technical decentralization of the Internet does not preclude the concentration of market power, and a "flat" technical architecture does not prevent nation states from asserting control of digital content that flows across and within their borders.

D. The "Third Sector"

Recent decades have seen the rise of self-governing, voluntary private organizations not dedicated to distributing profits to shareholders or directors, but pursuing public purposes outside the formal apparatus of the state. Examples of these institutions, known variously as non-profits, civil society, non-governmental organizations ("NGOs"), and the third or independent sector, include hospitals, universities, social clubs, and professional organizations.

Many key Internet/Web organizations such as the Internet Corporation for Assigned Names and Numbers ("ICANN"), the World Wide Web Consortium ("W3C"), and the Internet Engineering Task Force ("IETF") meet these criteria. For example, NGOs provide an alternative venue for governance; and, as Peter F. Cowhey and Jonathan D. Aronson have pointed out, the IETF's central role in Internet standards came about because the U.S. Government decided to delegate authority to it.[33]

Lester Salamon argues that the prominence of NGOs represents an "associational revolution."[34] Such organizations have clearly been more important in governing the Internet than interstate institutions. The International Telecommunication Union ("ITU"), for example, a state-sponsored-and-run organization which used to be the venue for standards setting, has been overtaken by community-driven

33. PETER F. COWHEY & JONATHAN D. ARONSON, TRANSFORMING GLOBAL INFORMATION AND COMMUNICATION MARKETS 214 (William J. Drake & Ernest. J. Wilson III eds., 2009).

34. LESTER M. SALAMON ET AL., GLOBAL CIVIL SOCIETY – DIMENSIONS OF THE NONPROFIT SECTOR (1999); *see also* Lester M. Salamon, *The Rise of the Nonprofit Sector*, FOREIGN AFFAIRS, July-Aug. 1994, at 109; Lester M. Salamon, Presentation at The 17th Annual International Association of Volunteer Effort Conference: The Third Sector and Volunteering in Global Perspective (2001). *But see* ROBERT D. PUTNAM, BOWLING ALONE: THE COLLAPSE AND REVIVAL OF AMERICAN COMMUNITY (2000).

organizations like the IETF, W3C, and IEEE.

If the requirement for formal institutional structure is relaxed, the Web 2.0-facilitated rise of private, voluntary engagement in politics represents an impetus, and perhaps even a venue, for new governance.[35] Today, the citizens' ability to know about the activities of their legislators and petition them has never been greater.[36] Tools for organizing into ad hoc coalitions (most famously the role of meetup.com in the 2004 and 2008 U.S. presidential campaigns, for example) have led to a ferment of groups that may grow into more recognizable institutions. Policymakers will have to invent new ways to track and reach these groups.

In addition to increasing civic engagement and public trust, citizen participation could also improve policy by expanding the very limited circle of parties with whom policymakers engage on a daily basis. Realistically, only a few citizens will have the interest and capacity to engage deeply on detailed policy issues, but participation will at least spread beyond the Beltway. The current wave of Web technology may also create new institutions: for example, those engaged in a hybrid of polling and lobbying.[37] In sum, detailed public participation in

35. U.S. examples at the time of writing include TRANSPARENCY CORPS, http://transparencycorps.org (last visited July 31, 2010) (a site "committed to helping citizens, bloggers and journalists be their own government watchdogs, by improving access to existing information, digitizing new information, and by creating new tools and Web sites to enable all of us to collaborate in fostering greater transparency."); OPENGOV, http://opengov.ideascale.com (last visited July 31, 2010) (a site collecting opinions on the question, "How can we strengthen our democracy and promote efficiency and effectiveness by making government more transparent, participatory, and collaborative?"); and WATCHDOG.NET, http://watchdog.net (last visited July 31, 2010) (a site "trying to build a hub for politics on the Internet."). Tools that facilitate engagement include OPENCONGRESS, http://www.opencongress.org (last visited July 31, 2010) (proclaiming to be "a free, open-source, not-for-profit, and non-partisan web resource with a mission to make Congress more transparent and to encourage civic engagement," which "brings together official government data with news coverage, blog posts, public comments, and more to give you the real story behind what's happening in Congress."); *Lobbying Database*, OPENSECRETS, http://www.opensecrets.org/lobbyists (last visited July 31, 2010) ("an independent website tracking the influence of money on U.S. politics, and how that money affects policy and citizens' lives"); and GOVTRACK.US, http://www.govtrack.us (last visited July 31, 2010) (a site to "help the public research and track the activities in the U.S. Congress, promoting and innovating government transparency and civic education through novel uses of technology.").

36. For example, on May 21, 2009, the Obama administration launched phase one of a three-phase project soliciting public collaboration to create an open government. *See Open Government Initiative*, THE WHITE HOUSE, http://www.whitehouse.gov/open (last visited July 31, 2010). The program aims both to improve the visibility of government activities (e.g., by allowing the evaluation of federal IT investments via the IT Dashboard, and providing access to high value, machine readable datasets via Data.gov) and to allow citizen participation in government activities (e.g., soldiers collaborating in updating Army Doctrine via the *Wikified Army Field Guide*, and citizens sharing ideas for the National Broadband Plan via the Ideascale tool on Broadband.gov).

37. Pierre de Vries, *Polling x Lobbying = ?*, DEEP FREEZE 9 (Dec. 17, 2009, 10:37 AM) http://www.deepfreeze9.blogspot.com/2009_12_01_archive.html.

policymaking could, if successfully implemented, change rule-making institutions.[38]

E. Tempo

While the rate of change of ICT technologies and services is likely to slow down significantly or even stop, the change that has been wrought thus far is significant. After the political system has adjusted to the transient stresses of rapid change, it will have to confront a new reality: technology has brought about a step change in the tempo at which we live our lives.

William Scheuerman, for example, argues that the "social acceleration of time" has created a profound imbalance between the branches of government (e.g., legislative, executive, and judicial) in liberal democratic systems like the U.S.[39] Scheuerman argues that this relatively recent historical process has been brought about by three factors: (1) a more rapid rate of technological innovation; (2) accelerated patterns of basic change in society at large, e.g., the workplace; and (3) the acceleration of everyday life via new means of high-speed communication and transportation.[40]

Even if the rate of techno-commercial innovation slows down, the rate at which global markets generate and propagate novelty will be a challenge for political systems, whose time cycles are set in constitutions, which change only very slowly, and human physiology, which changes hardly at all.[41] The future comes much faster in such a situation, and even

38. There are, of course, substantial challenges. While Web 2.0 is giving participatory democracy a fillip, much of the "we're listening to you" rhetoric is theater: citizens are asked to submit YouTube videos, and a select few are played to simulate that someone is paying attention. There are risks of decreasing public trust if the process is handled inappropriately. Understaffed and non-responsive government bodies could reduce public trust and interest if citizen feedback is unaddressed, and, as with all legislative feedback, comments received through Web 2.0 technologies represent a self-selecting portion of the population, not the general public. Finally, there are image risks: questions that came into the "Open for Questions" feature on Change.gov regarding President Obama's possible knowledge of the Blagojevich scandal were flagged as "inappropriate" by Obama supporters, who removed them from public view in a way that was perceived in some quarters as a cover-up. *See* Evan Ratliff, *The Wired Presidency: Can Obama Really Reboot the White House?*, WIRED, Feb. 2009, at 77; Jake Tapper & Sunlen Miller, *Obama Transition Web Site 'Open for Questions' -- Except on Blagojevich*, ABC NEWS (Dec. 10, 2008, 10:03 PM) http://blogs.abcnews.com/politicalpunch/2008/12/obama-transitio.html.

39. WILLIAM E. SCHEUERMAN, LIBERAL DEMOCRACY AND THE SOCIAL ACCELERATION OF TIME xvi-xvii (2004); *see also* Barbara A. Cherry, *Institutional Governance for Essential Industries Under Complexity: Providing Resilience Within the Rule of Law*, 17 COMMLAW CONSPECTUS 1, 19-30 (2008) (discussing the implications of Scheuerman's work for ICT policy).

40. Scheuerman, *supra* note 39, at xv.

41. Human thinking will not speed up much, if at all, though tools can make it look as if it does. *See, e.g.*, EDWIN HUTCHINS, COGNITION IN THE WILD xiii (1995) (contending that

good predictions become obsolete much more rapidly. Scheuerman's discussion on the challenges of stability and transparency to constitutions[42] can apply to any set of principles, including those presented in this paper. Institutions, both organizations and rules, have to develop well-founded ways to evolve their own constitutions.

F. Scale

From ideas to devices, the growth of ICT has brought about a dramatic increase in the number of entities in modern life. Even if the exponential growth we are experiencing at the moment ceases (as it has for science, some argue[43]), we already have an embarrassment of riches in terms of the material resources available to us in the developed world.

Moreover, we live in a time of enormous diversity in our applications, our devices and services, and our processing power per person. Even if it does not keep growing, it is unlikely to shrink.[44] ICT has enabled major changes in how information is generated, collected, compiled, and aggregated, and neither regulation nor entrepreneurs have done much more than scratch the surface.[45]

G. Two Kinds of Change

A change in context that forces a change in governance does not need to be irreversible for the consequences to be profound. Since history is cumulative, a "phase change" in policy making is a change that never really reverts to its prior form, since the context changes with it. However, it is useful to make a rough and ready separation of the six drivers listed above into two categories:[46]

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we need to think in terms of "socially distributed cognition" in a system that comprises people and the tools that were made for them by other people).

42. Scheuerman, *supra* note 39, at 71-104.

43. David Goodstein, *The Big Crunch*, CAL. INST. OF TECH. (Sept. 19, 1994), http://www.its.caltech.edu/~dg/crunch_art.html.

44. The litany barely needs repeating. *See, e.g.*, Ludwig Siegele, *Let It Rise*, ECONOMIST, Oct. 25, 2008, at 3-4; Kenneth Cukier, *A World of Connections*, ECONOMIST, Apr. 28, 2007, at 3-6; Andreas Kluth, *Make It Simple*, ECONOMIST, Oct. 30, 2004, at 3-4.

45. Cukier, *supra* note 23, at 3.

46. I think all of them are rooted in the growing intangibility of our societies, which has been accelerated by ICT: complex software running on powerful processors linked by very fast networks. The ability to compose more components than the mind can manage makes programming/debugging very hard, particularly when those components are so easily mutable: it is easier to change a line of code than to retool an assembly line. *See, e.g.*, Pierre de Vries, *Hard Consequences of the Soft Revolution*, DEEP FREEZE 9 (Dec. 24, 2009, 11:43 AM), http://deepfreeze9.blogspot.com/search/label/hard-intangibles. Similarly, the "soft products" of these technologies, themselves complex, composable, and mutable become the inputs for culture and thus policy making: it's easier to change Web artifacts and social networks than to manage a movement using letters and sailing ships.

> • **Cyclical changes**: The drivers in this category are modularity, convergence, and decentralization. The innovations of the last few decades have put us into a qualitatively different policy regime, and reworking regulations will take many years. However, the underlying technical drivers are transient. The Internet/Web is growing up. The flux will subside at different rates for different attributes, and integration of components and systems, vertical integration, and centralization will reappear (and then fade again).[47]
>
> • **Step changes**: The drivers in this category are "third sector," tempo, and scale. The changes wrought by ICT in creating new institutions and increasing tempo and scale represent irreversible step changes. They represent new conditions that change the basis for governance.

These two kinds of change are commonly seen in complex adaptive systems. I now turn to a review of these phenomena, with a view to deriving lessons for ICT governance.

II. INSIGHTS FROM MANAGING COMPLEX ADAPTIVE SYSTEMS

This section outlines some characteristic behaviors of complex adaptive systems that are relevant to analyzing the communications industry, and thus provides a basis for thinking about Internet policy in terms of managed ecosystems.[48]

A. Definitions

A *system* is an organized collection (frequently, a self-organized collection) of elements that acts over time to produce reasonably predictable outcomes. Each element affects the whole, and the whole influences the behavior of the parts. The parts cannot be understood only by studying the whole, and the whole has properties that are not inherent in any of the parts. Systems are not decomposable into sub-processes (e.g., economic, technological, or political) that can be understood and managed in isolation.

Systems self-organize many of their interactions without outside intervention, and their characteristic structural and behavioral patterns

47. This prediction contradicts Ray Kurzweil's contention that technological change accelerates at an exponential rate, and will continue to do so. For Kurzweil's theory, see Ray Kurzweil, *The Law of Accelerating Returns*, KURZWEILAI (Mar. 7, 2001), http://www.kurzweilai.net/the-law-of-accelerating-returns; *see Accelerating Change*, WIKIPEDIA, http://en.wikipedia.org/wiki/Accelerating_change (last visited July 31, 2010), for an introduction. *But see* Erik Larsen, *Ray Kurzweil's Impossible Vision*, http://www.iscid.org/papers/Larson_KurzweilReview_012303.pdf, for a critique.

48. This material is treated in more detail in *Governance as Forestry*, *supra* note 12, at 17.

are mainly a result of interaction between the sub-systems.

There are many schools of *systems thinking*—the process of understanding how things influence one another within a whole.[49] The common thread is a shift in emphasis from an analysis of separate parts to that of the ensemble, and from static analysis and description to dynamic activities and processes.

A *complex adaptive system* is a collection of interacting adaptive agents.[50] Attributes that distinguish complex adaptive systems from other collections of agents include self-similarity, complexity, emergence, and self-organization. Complex systems typically have a nested hierarchical structure, with interactions across the levels (or scales) of the hierarchy. Processes respond non-linearly to inputs; there is a mix of fast and slow processes; time lags play a critical role; outcomes are path dependent; and components adapt to disturbances through feedback loops.[51]

B. Attributes of Complex Systems

Introductions to complex adaptive systems abound.[52] In this section I will highlight four important attributes that are easily recognized in the ICT industry.

1. Cycles and Transitions

Complex adaptive systems can have many stable states. Sometimes they return to states previously visited, showing cyclical behavior. In other cases, a system might flip to an entirely new equilibrium state unlike any previously occupied (note the similarity to the cyclical and

49. For surveys, see GEORGE P. RICHARDSON, FEEDBACK THOUGHT IN SOCIAL SCIENCE AND SYSTEMS THEORY (Pegasus Commc'ns 1999); LARS SKYTTNER, GENERAL SYSTEMS THEORY: IDEAS & APPLICATIONS (2001); and *Systems Theory*, WIKIPEDIA, http://en.wikipedia.org/wiki/Systems_theory (last visited July 31, 2010).

50. *Complex Adaptive System*, WIKIPEDIA, http://en.wikipedia.org/wiki/Complex_adaptive_system (last visited July 31, 2010). The term "complex adaptive system" is often associated with the research field that developed in the 1980s at the Santa Fe Institute.

51. For a discussion of these effects in a biological setting, see Brian Walker & Nick Abel, *Resilient Rangelands – Adaptation in Complex Systems*, *in* PANARCHY: UNDERSTANDING TRANSFORMATIONS IN HUMAN AND NATURAL SYSTEMS 293 (Lance H. Gunderson & C. S. Holling eds., 2002) [hereinafter PANARCHY]. For a commercial setting, see JOHN D. STERMAN, BUSINESS DYNAMICS: SYSTEMS THINKING AND MODELING FOR A COMPLEX WORLD (2000). For applications in economics, see ERIC D. BEINHOCKER, THE ORIGIN OF WEALTH: EVOLUTION, COMPLEXITY, AND THE RADICAL REMAKING OF ECONOMICS (2007).

52. *See, e.g.*, ROBERT AXELROD & MICHAEL D. COHEN, HARNESSING COMPLEXITY: ORGANIZATIONAL IMPLICATIONS OF A SCIENTIFIC FRONTIER (2001); Beinhocker, *supra* note 51; JOHN H. MILLER & SCOTT E. PAGE, COMPLEX ADAPTIVE SYSTEMS: AN INTRODUCTION TO COMPUTATIONAL MODELS OF SOCIAL LIFE (2007).

step changes in ICT discussed above).[53] The route that a system takes between these states is a function of its history: path dependency and self-reference are traits of complex systems and are well known in economics and planning.[54]

Holling's panarchy theory proposes that biological systems exhibit a four-stage cycle: growth, maturity, collapse, reorganization, and back to growth.[55] This adaptive cycle operates at different rates in each of a system's many spatial and temporal scales. During the *growth* stage, there is rapid colonization of recently disturbed areas; for example, after a fire or windstorm has removed large amounts of biomass in a forest. The connectedness between organisms is low, which leads to high resilience where the loss of one species does not lead to the loss of another. As the forest matures it moves into the *maturity* phase of the cycle, dominated by the accumulation of material. The network of connections between biomass and nutrients becomes increasingly tight and fragile; every niche in the forest is filled, and every resource is used. Organisms become much more interdependent as food chains become dense and interconnected. The maturity phase is followed by a dramatic *collapse* phase, triggered in a forest by fire, drought, insect pests, etc. Energy is unbound, and networks are broken up. This sets the scene for the fourth phase, *reorganization*, where opportunistic species that have been suppressed by the stable configuration of the maturity phase move in. This is a period of innovation and restructuring which lays the groundwork for a return to another growth phase.

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53. A favorite two-state model of ecologists is lake turbidity, in which biological and political processes are intertwined. Marten Scheffer, *Searching Explanations of Nature in the Mirror World of Math*, 3 ECOLOGY & SOC'Y (1999); *see also* Marten Scheffer et al., *Dynamic Interaction of Societies and Ecosystems – Linking Theories from Ecology, Economy, and Sociology*, in PANARCHY, *supra* note 51, at 195. The more vegetation in a lake, the clearer the water, that is, the lower the turbidity. As one adds nutrients, e.g., from agricultural run-off, turbidity increases as phytoplankton grows. For a given nutrient load, two states are possible within a certain range: low and high turbidity. (This is true within a certain range of nutrients. If the nutrient inflow is very low, one only finds the clear state. If the nutrient load exceeds a critical amount, a lake will always be turbid.) However, once a critical nutrient load is exceeded, the lake-bottom plants die off because of lack of light, the water-clearing fauna that depended on them die as well, and the lake flips into a high-turbidity state from which it won't recover even if nutrient loads are reduced below the critical point. Nutrients have to be reduced well below the critical point to bring back plant life and switch the lake back to the low-turbidity state. Economic analysis and political pressure tends to drive the system to the point where nutrient input from agriculture is high, but just below the tipping point to high turbidity—a point that is unstable to small variations in inputs, which can lead to a rapid transition to high turbidity from which it is costly and politically difficult to return. This is an example of narrow economic efficiency reducing system resilience.

54. *See, e.g.*, W. Brian Arthur, *Inductive Reasoning and Bounded Rationality*, 84 AM. ECON. REV. 406, 406-11 (1994); Horst W.J. Rittel & Melvin M. Webber, *Dilemmas in a General Theory of Planning*, 4 POL'Y SCI. 155, 160 (1973).

55. PANARCHY, *supra* note 51, at 296 (using the terms exploitation, conservation, release, and reorganization for the four stages).

Collapse is inevitable and necessary for renewal in an ecosystem. Since complex systems operate at many concurrent scales, however, the collapse phase at one scale need not trigger the collapse of the entire ensemble. A system is resilient if the cycles at different scales are not in sync. A forest, for example, is able to resist catastrophic fire damage if its peak maturity (and thus susceptibility to fire) does not coincide with a temperature peak in the regional climate cycle.

The Holling adaptive cycle can be applied to phases in industry development. When technology or some other disturbance opens up a new market, there is a *growth* phase where economic connectivity is low and supply chains are rudimentary.[56] Consolidation follows, representing a *maturity* phase where revenues grow steadily and everybody finds their niche and stops competing at the margins. Here, innovation begins to decline. Then follows a *collapse* phase, where some disruptor breaks the reigning industry model and a lot of money is lost.[57] Revenues drop in the market as previously defined, even though economic productivity continues to grow. New entrants flood in to *reorganize* the industry with a boom in experimentation.

Economies also show the characteristics of complex adaptive systems.[58] Many, if not all, commodity markets show booms and busts.[59] There have also been a number of cycles in communications technology: the rise of the telegraph, then broadcasting, then the Internet.[60] For example, there was a blossoming of telephone companies in the 1900s-1920s, which ended with the creation of the AT&T monopoly. This was broken up in 1982, leading to a plethora of competitors who decreased

56. Even though economic connectivity may be low, social networks may be rich. Peter Haynes points out that most innovation takes place in geographical concentrations where there is very high inter-personal connectivity and quick cycle speed (personal communication). Dependencies remain low, though; the failure of one start-up doesn't lead to the failure of a series of others.

57. In Holling's analysis, the mature phase of a forest—the one just before collapse—contains a very large number of species in very many, very specific, tightly interlocked niches. The analogy to business isn't direct; there aren't necessarily many firms at the peak. A large number of interconnected products at the peak may well be internalized to a monopolistic firm. One will see a great deal of diversity and interconnectivity within the firm (e.g., feature bloat in Windows and Office), but not in the industry at large. At this point, the system is particularly vulnerable to cascading failure, e.g., through security flaws, app compatibility or robustness bugs, new market entrants, or antitrust attack.

58. Paul Samuelson worked on this in the 1930s. *See, e.g.*, PAUL SAMUELSON, FOUNDATIONS OF ECONOMIC ANALYSIS 504 (1947); Beinhocker, *supra* note 51, at 77 provides a contemporary survey.

59. Sterman, *supra* note 51, at 113.

60. Carlota Perez's analysis of 40-year technology innovation cycles provides a longer-scale context in which financing interacts with technology to generate periodic booms and busts. CARLOTA PEREZ, TECHNOLOGICAL REVOLUTIONS AND FINANCIAL CAPITAL: THE DYNAMICS OF BUBBLES AND GOLDEN AGES 9-12 (2002).

again to a handful in the early 2000s.[61] Similarly, there have been booms and busts in applications: the Windows consumer "ecosystem" of the mid-'90s, the dot-com booms of the early 2000s, and today's Web 2.0 phenomenon.

One learns from ecology that disruptive cycles are unavoidable and indeed healthy since they lead to innovation—they get rid of incumbents for a while and allow experiments in a new system configuration. The trick is to ensure that the collapses are localized. For example, periodic, small, and local forest fires keep the litter load down and prevent massive fires that burn so hot they essentially sterilize the soil, precluding seed germination and reducing soil health.[62] This suggests that diversity and taking a big picture view, both principles to be discussed below, are useful tools in complex system management. A rigid, unchanging structure is liable to result in catastrophic collapse, while a diverse and flexibly-managed arrangement is more resilient.

2. Incomplete Knowledge

It is not possible to set up analytical models for complex systems. Any model that purports to capture the behavior of a system necessarily under-represents it.[63] No model less complex than the system itself can exactly, and in detail, forecast its behavior. It is a trade-off. Analytical tools work either for complicated systems that are relatively predictable, or for simple systems that are uncertain, but not for systems that are both complex and uncertain.[64]

Conflicting explanations compound a deeper issue: the lack of agreement on the problem at hand. Many policy debates entail *deep uncertainty*, defined as the condition where the decision-maker does not

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61. Scheffer et al., *supra* note 53, at 335 tells the story of AT&T in terms of the Holling adaptive cycle. After open competition at the beginning of the telephone industry, the Bell System emerged with a dominant monopoly in the late 19th century (maturity). Patent expirations in 1893-94 led to partial breakdown of its monopoly (disruption). This triggered reorganization and a phase of open competition from independent telcos (restart and competition). Around 1907 it started absorbing the independents, evolving into a monopoly again (maturity). An antitrust crisis in 1915-19 led to the creation of a regulated monopoly, which survived into the '80s (rapid disruption, restart and re-consolidation). The court-ordered break-up of 1982 led to a period of renewed competition (disruption, restart, innovation). However, the Telecom Act of 1996 allowed consolidation to restart, and the industry is rapidly maturing again.

62. R.E. Masters, *Effects of Fire Suppression*, FOREST ENCYCLOPEDIA NETWORK 170 (Nov. 14, 2008); Alison Berry, *Forest Policy Up in Smoke: Fire Suppression in the United States*, PROP. & ENV'T RES. CTR. (2007).

63. Steven C. Bankes, *Tools and Techniques for Developing Policies for Complex and Uncertain Systems,* 99 PROC. NAT'L. ACAD. SCI .U.S.A. 7263, 7263 (2002).

64. There are, though, pockets of predictability in complex adaptive systems. *See, e.g.*, J.V.Andersen & D. Sornette*, A Mechanism for Pockets of Predictability in Complex Adaptive Systems*, 70 EUROPHYSICS LETTERS 697 (2005).

know, or multiple decision-makers cannot agree on the system model, the prior probabilities for the uncertain parameters of the system model, and/or the value function used to rank model outcomes.[65] Horst W.J. Rittel and Melvin M. Webber coined the term "wicked problems" to describe a similar set of challenges in making social policy, including the absence of a definitive problem formulation, the lack of a stopping rule or an ultimate test of a solution, and the lack of an enumerable set of potential solutions.[66]

Systems thinker David Weinberg posited the "complementary law," which states that different perspectives on a system will reveal truths regarding that system that are neither entirely independent nor entirely compatible.[67] In other words, a complex system has many distinct but equally valid descriptions. This means that conflict in policymaking is unavoidable. Since people have different perspectives, they will form different assessments of the situation and varying valuations of desirable outcomes.

Regulators seldom if ever have sufficient knowledge and control of a system to be able to drive it toward a specific outcome. There are many reasons for this. One is the fact that any chosen path towards an outcome is made obsolete as participants adapt to being regulated. Another is that the system changes more quickly than the political process that regulates it. Consequently, the problem that regulation is intended to solve may be misidentified due to the complexity of the situation. Even if correctly identified, the problem may fix itself without intervention. Finally, any regulation will immediately have unintended consequences beyond just those required to address the problem at hand.

The incompleteness of any model of a complex system and the necessity for complementary perspectives suggest that policymakers take a big picture approach, i.e., a broad view of how problems might be solved. The deep uncertainty about these systems also implies the need for flexibility since, more often than not, one cannot be sure of either the problem or the best solution.

3. Hierarchy and Cross-Linking

Systems consist of nested sub-systems with linked dynamics at different scales. As a system grows, its complexity increases and a hierarchy emerges. Each level is made up of several sub-systems, which can themselves be decomposed. The higher levels control aspects of the lower level sub-systems. However, while the higher layers may be

65. Robert J. Lempert et al., *Confronting Surprise,* 20 SOC. SCI. COMP. REV. 420, 422 (2002).

66. Rittel & Webber, *supra* note 54, at 155-69.

67. SKYTTNER, *supra* note 49, at 92.

complex, their intricacy is dwarfed by the aggregate complexity of the lower layers.[68]

Cross-scale interactions are particularly important at times of change and renewal. Critical change in one cycle can cascade up to larger and slower scales when they are vulnerable, such as when a ground fire in a forest spreads to the crown of a tree, then to a patch in the forest, and then to a whole stand of trees before it is finally extinguished. Conversely, renewal at a given level can be supported by drawing on resources at larger/slower scales, as when a burnt forest draws on its accumulated seed bank and soil nutrients to re-grow.

The hierarchy implicit in a complex system helps to explain why a layers approach can help guide policy. For example, one can represent the four layers of Werbach[69] or Solum & Chung[70] as a sequential unpacking (Figure 0).

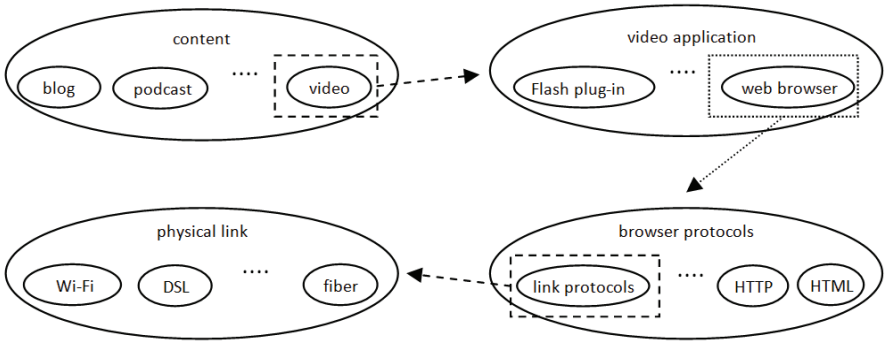

Figure 0: The Layers Model as a set of hierarchically nested sub-systems

The consideration of nesting and cross-linking should prompt policymakers to prefer diversity in the structure and constituents of a system, and to attend to the importance of weak coupling between system layers, referred to as "delegation" below.

4. Novelty and Surprise

It is very difficult to discern cause and effect in most complex systems. The interlocking interactions of sub-systems generate behavior

68. *Id.* at 60.

69. Kevin D. Werbach, *A Layered Model for Internet Policy,* 1 J. ON TELECOMM. & HIGH TECH L. 37, 37 (2002). A draft of this article was presented in September 2000 at The 38th Research Conference on Communication, Information and Internet Policy held by TRPC.

70. Solum & Chung, *supra* note 28.

that usually cannot be tied back to the isolated behavior of single components. In cases where cause and effect can be linked, the distance between the events (in time or space) can be very large, making the chain of causality quite tenuous. System responses to perturbations, including restoration efforts in ecosystems or interventions in markets, can be highly nonlinear and lead to management surprises.

Even systems that have been developed to have deterministic behaviors, such as biological organisms and human-engineered machines, are unexpectedly and catastrophically fragile in some rare configurations.[71] John Doyle and Marie Csete give the Internet as an example of such robust-yet-fragile behavior, where a small protocol error can cause a system failure.[72] Anderson et al. point out that the proven resilience of the Internet does not necessarily apply to all failure modes.[73]

Further, humans have an innate tendency to overestimate their ability to predict key trends and discontinuities.[74] Surprise stems from several sources, such as: extrapolating the present even though discontinuous jumps are common shapers of the future, under- or over-estimating the impact of an anticipated event, failing to anticipate the timing of events, differences between our revealed ability to respond to events versus what was anticipated, over-estimating one's confidence in knowing the future, and self-limiting prophesies where predictions elicit responses that counter their expectation. Human intuition is particularly prone to break down under conditions of complexity.

Thus, human intuition is a frail guide to action when dealing with

71. J.M. Carlson & John Doyle, *Complexity and Robustness,* 99 PROC. NAT'L. ACAD. SCI. U.S.A. 2538 (2002). Such systems are highly structured, non-generic, and have self-dissimilar internal configurations at different scales and levels of abstraction, very unlike the sand piles and flocks of dumb automata so often treated in complexity theory. Their external behavior is typically robust, but there is a risk of rare but potentially catastrophic cascading failures initiated by quite small perturbations. Carlson and Doyle argue that there is a trade-off between internal simplicity and robustness: simple systems cannot operate in highly fluctuating environments; robust systems necessarily have to be complex. However, such systems can be catastrophically disabled by cascading failures initiated by tiny perturbations. For example, organisms work well under most conditions, but a single rogue mutation can trigger a fatal cancer.

72. John Doyle & Marie Csete, *Rules of Engagement*, 446 NATURE 860, 860 (2007). The use of TCP/IP allows plug-and-play between modules that use the same protocols, and TCP can run transparently on any hardware that supports IP. Complexity and fragility are hidden because the protocols allow robustness to outright failures; modules can come and go. However, a small protocol error can cause catastrophic problems.

73. Tom Anderson et al., *Design Guidelines for Robust Internet Protocols,* 33 COMPUTER COMMC'N REV. 125, 125 (2003). The authors note that systems obeying the syntax of a protocol may in fact be behaving incorrectly, and remark that such failures occur with surprising regularity.

74. NASSIM NICHOLAS TALEB, FOOLED BY RANDOMNESS: THE HIDDEN ROLE OF CHANCE IN LIFE & IN THE MARKETS 28-42 (2001); Lempert et al., *supra* note 65.

adaptive complex systems.[75] The large number of variables exceeds our cognitive capacity, and the linear models our brains tend to prefer do not fully capture the reality of non-linear interactions. Long delays between causes and effects confound our ability to understand dynamics. Complex adaptive systems typically have both slow and fast variables, yet people respond better to fast variables. Changes in slow variables may not be recognized because they are imperceptible on human time scales or because they do not fit into the mental models of observers. However, these changes can often tip a system into a new state. Even when slow variables are recognized, the fact that collective action is needed to address them constrains responses. This leads to an emphasis on short-term welfare that is counter-productive in the long run.[76]

In summary, one cannot understand or predict the behavior of a complex adaptive system with much accuracy. This is true even for relatively constrained policy domains, since policy interventions almost by definition stress the system in unanticipated directions. The novelty and surprise of complex adaptive systems suggest that policies need to be flexible to respond to unexpected developments. Policymakers should also take a holistic approach to the problem in order to minimize side effects. As John Sterman points out: "There are no side effects—only effects. Those we thought of in advance, the ones we like, we call the main, or intended, effects, and take credit for them. The ones we didn't anticipate, the ones that came around and bit us in the rear—those are the 'side effects'."[77]

C. Internet as a Managed Ecosystem

It is easy to imagine the Internet as a large ecosystem, and the metaphor is common. Strictly speaking, however, the conceptual mapping is rather weak since there are many mismatches when comparing an industry to an ecosystem.[78]

Regardless, the ecosystem concept has gained traction because it reveals a deeper truth: the Internet and ecosystems are both examples of complex adaptive systems. Thus, the Internet is to an ecosystem as a whale is to an elephant. For example, it could be useful to think in terms of elephants if one has to manage oceans but does not know much about

75. The frailties listed here contribute to surprises when managing complex adaptive systems. They are to be distinguished from the ignorance-in-principle discussed under "Incomplete Knowledge" in Section II.B.2.

76. Walker & Abel, *supra* note 51, at 293.

77. Sterman, *supra* note 51, at 505.

78. See my blog for example, *The internet is not an ecosystem, but…*, DEEP FREEZE 9 (Feb. 10, 2010, 3:41 PM), http://deepfreeze9.blogspot.com/2010/02/internet-is-not-ecosystem-but.html. There are mismatches in number, metrics, topology, time scales, choice, foresight, and goals.

whales, since both are large, social mammals. However, the differences between the two, e.g., living on land vs. in water, could end up being the decisive factor in some cases.

At the very least, lessons from managed ecosystems can illuminate the dynamics and pitfalls of managing the Internet, and principles derived from one can be applied to the other.

For one, the Internet/Web conceived as a complex social system rather than a deterministic technical problem alters presumptions about the roles of participants. Entrepreneurs, consumers, and policymakers are no longer the controllers of, or mere parameters in, a techno-economic system. Rather, they are adaptive agents in an integrated socio-techno-economic system. The surprise and novelty of such a system further bolsters the importance of management principles such as flexibility (since behavior cannot be predicted) and taking a big picture view (since innovation can come from any, and across many, scales).

While many of the attributes of the Internet/Web that require complex thinking may be new, this novelty is not required for systems thinking to be applicable. The more pertinent novelty is the emerging availability of the tools of complex science to tackle technology- and communication-based policy problems in new ways.

Managed ecosystems, such as forests, are a particularly illuminating metaphor since the analogies with the Internet/Web are relatively straightforward. Most of the action in both forests and communication systems happens spontaneously, but systems management is required of regulators in both cases. Further, the existence and form of the forest is the result of human intent, subject to the vagaries of influences such as weather, pests, and politics. In the same way, the Internet/Web is more than just an autonomous market or culture of complex interacting companies and customers. While Internet/Web innovation is driven by entrepreneurs and technologists with their own agendas, it is shaped by government decisions.[79] Similarly, a forest is neither pure nature nor pure culture; it is nature in the service of culture. Likewise, the Internet/Web is neither pure technology nor pure politics. The communications market, left to its own devices, will not automatically provide all needed social goods any more than nature. Left to its own devices, nature will not necessarily rebuild a flattened forest as an idyllic stand of pines rather than an overgrown bramble patch.[80]

Looking back, the ecosystem management metaphor provides a cogent way of understanding the change in communication systems that has taken place over the last few decades. The old silos of traditional

79. This metaphor is worked out in detail in *Governance as Forestry*, *supra* note 12, at 14.

80. See the story of Cathedral Pines in MICHAEL POLLAN, SECOND NATURE: A GARDENER'S EDUCATION 176 (1991).

communications regulation resembled commercial farming. There were a limited number of well-defined fields, each with its own crop: corn, wheat, beans, vegetables, and so on. It was clear who was responsible for the farm and the measures of success, e.g., bushels per acre per dollar of inputs, were well defined. Today's Internet/Web is more like a planet-wide patchwork of parks and forests, and making Internet policy is like public forestry or gardening on a global scale. Control is decentralized, and there is a great deal of variety. There are many competing uses and users, from logging to pleasure to ecological services. Given this pluralism, success metrics are ambiguous at best, and *ex ante* rulemaking is a perilous undertaking.

D. An Uncertain World

For the foregoing reasons, the best response to an uncertain and ever-changing situation is to accept it and aim at resilience rather than efficiency. Any diagnosis and prescription should always be provisional and made with the knowledge that it will have to be changed. Policymaking is an "eternal experiment."[81] Using efficiency as the measure of a solution, as neoclassical economics might, assumes that one has enough knowledge of the entire system to find an optimum solution, and that we have enough control to effectuate it. In fact, in today's regulatory landscape, an optimum probably does not exist. If it does exist, it may be unstable, and even if a stable solution can be identified, decision-makers would have so little control over the system that the solution could never be implemented.

In such uncertainty, D. J. Snowden and colleagues have developed a useful categorization of problem contexts for which different approaches are needed.[82] *Simple* and *complicated* contexts both assume an ordered universe, where cause-and-effect relationships are perceptible, and right answers can be determined based on the facts. In a simple context there is one right answer, but a complicated context may contain many. *Complex* and *chaotic* contexts are both unordered; there is no immediately apparent relationship between cause and effect, and the way forward is determined based on emerging patterns. No single right answer exists in complex contexts, and in chaotic contexts a search for right answers would be pointless because cause-effect chains are impossible to determine.

The presumption of this paper is that the methods for dealing with simple and complicated contexts are relatively well understood, and that

81. My thanks to Mark Crawford (personal communication) for this expression.

82. For an introduction to the Cynefin (pronounced ku-*nev*-in) framework, see D.J. Snowden & M. Boone, *A Leader's Framework for Decision Making*, HARV. BUS. REV., Nov. 2007.

we lack heuristics for handling the complexity that is the hallmark of contemporary communications policy. The principles outlined in the next section are proposed as part of a new policy making toolkit to deal with such complex contexts.

III. THE RESILIENCE PRINCIPLES

Supervising the Internet/Web, or any complex adaptive system, entails dealing with cycles and step changes, incomplete knowledge, cross-linked hierarchies, and surprise. Further, since communications systems are constantly changing, a policy approach should be built on a few simple and enduring principles that apply no matter which phase of the adaptive cycle the Internet/Web or its successors finds itself in. This section defines and discusses four policy principles (see Table 1) that provide a way to balance the competing pressures of innovation and public interest mandates, and the need for both stability and disruptive innovation.[83]

A. The Importance of Resilience

Occasional catastrophic failures cannot be designed out of a complex adaptive system. They are a consequence of its adaptability and essential for long-term productivity.[84] Striving for immutability sets up the conditions for a catastrophic collapse.

For example, the intensive use of lawn chemicals may lead to superficial health, but such use force-feeds the grass while denuding the soil of organisms. This leads to feeble grass that is vulnerable to diseases and weeds.[85] In politics, the periodic replacement of political leadership flushes out corruption and provides new insights, even though a price is paid in the loss of expertise. Policy for the Internet/Web should therefore not only prepare for collapses, but build in the conditions that allow periodic small collapses and minimize the likelihood of rare catastrophes.

A *resilient* system is one that can maintain its structure and function in spite of experiencing disturbances.[86] In cases where there is uncertainty about outcomes—almost always the case in complex systems—it is better

83. One should not expect this approach, or any other, to give unique, unambiguous, or uncontested answers to complex policy problems. The consequences of a principle may be arguable, there may be debate about the applicability of competing principles, or the principles may imply conflicting courses of action. Policymaking is judgment, not arithmetic. Questions will ultimately be settled by reasoned argument as in a court of law, rather than by analytical calculation.

84. Carlson & Doyle, *supra* note 71, at 2540; PANARCHY, *supra* note 51, at 216.

85. Beth Botts, *Set your lawn free: Getting to the root of healthy, happy grass*, CHI. TRIB., May 06, 2007, at C4.

86. C.S. Holling & Lance H. Gunderson, *Resilience and Adaptive Cycles*, *in* PANARCHY, *supra* note 51, at 25; Scheffer et al., *supra* note 53, at 202.

to choose robustness over optimality. A robust strategy is one that performs reasonably well compared to the alternatives over a wide range of plausible scenarios.[87] To contrast, optimality would select the strategy that performs best in the most plausible scenario, not necessarily the one that is most resilient regardless of scenario.

Thomas Homer-Dixon points out that resilience is a public good and tends to be underprovided because no individual competitor is willing to carry the buffer needed for robustness in the face of catastrophe.[88] Ensuring resilience therefore becomes the responsibility of policymakers.

A variety of techniques increase the resilience of policies. These include the following: trying not to pick or determine a single preferred outcome; including contingency plans for the worst case; designing policies that adapt to changing circumstances by evolving over time in response to new information; modeling the systems dynamics of the problem under consideration; loose coupling between sub-systems at different scales of hierarchy; experimentation; avoiding monoculture; and analyzing the robustness of chosen strategies against many plausible futures. I have grouped these considerations into the "Resilience Principles":

87. Lempert et al., *supra* note 65, at 423.

88. THOMAS F. HOMER-DIXON, THE UPSIDE OF DOWN: CATASTROPHE, CREATIVITY, AND THE RENEWAL OF CIVILIZATION 286 (2006).

Table 1: The Resilience Principles

Flexibility	***Determine ends, not means***. Describe and justify the outcomes sought, not the methods to be used to achieve them. When prescribing rules, prefer *ex post* to *ex ante* regulation. Use technology- and business-model neutral rules. Give new entrants glide paths to meet policy objectives. Regularly review the need for ongoing regulation, e.g., by sun-setting regulations.
Delegation	***Most problems should be solved by the market and civil society***. Government's role is to provide incentives and guidance, and to address identifiable, critical shortcomings. Provide backstop powers to regulators. Intervene if players close to the action fail to solve problems.
Big Picture	***Take a broad view of the problem and solution space***. Recognize that interaction occurs at many different scales, from packet flows to social networks. Prefer generic- to sector, technology-, or business-specific legislation; avoid silo-specific regulation wherever possible.
Diversity	***Multiple solutions are possible and desirable***. Legislation and rules should allow and encourage multiple solutions. Do not entrench one solution through regulatory preference. Encourage competition and market entry.

B. Flexibility

Since the evolution of a system is so uncertain, it is unwise to pick, predict, or optimize for a specific preferred outcome. Ignorance of the details of how a rapidly evolving system works, combined with the likelihood of unwanted and unexpected side effects, means that regulation should fix as few parameters as possible in order to achieve its goal.

This demands regulatory humility, since it can be difficult to know when to encourage innovation and when to allow mature incumbents to deliver the benefits of scale. Regulators do not have the luxury of having two policy regimes—say, one for stability and another for change—since different parts of the systems may be in different phases at a given moment. There may be geographical diversity (Internet access is mature in the U.S., but booming in Asia), functional diversity (messaging services are mature, but online content is still changing rapidly), or structural diversity (in the network stack, data transport is mature while social networking applications are still evolving). Policies should be flexible enough to adapt to developments and support sub-industries that are in different phases of the development cycle at the same moment.

Neutral, open-ended policies are more likely to cope effectively with

changing, contradictory situations than detailed rules. However, policymakers should be ready and able to act in case something goes wrong by having the authority to impose regulations rapidly, for example.

One mechanism to achieve this is to prefer regulation after the fact (i.e., *ex post* rather than *ex ante*), since this allows policymakers to respond to problems that actually arise, rather than committing them to hypothetical scenarios. The more specific a regulation, the longer it takes to change, since it enshrines scores of hard-fought trade-offs. However, regulation before the fact may still be necessary in order to maintain the systems diversity that is required for resilience when there is a clear and present danger of the entrenchment of market players who already have significant market power (see Section III.E below).

David D. Friedman compares speed limits (*ex ante*) with penalties for reckless driving (*ex post*), and he observes that *ex post* punishments are most useful when the behavior is determined by private knowledge that the regulator cannot observe until after the event.[89] When an object of governance is thing-like, changes in attributes can be easily observed, e.g., a data breach occurs, some packets don't cross the network. This quality makes *ex ante* rules attractive. On the other hand, when governance concerns behavior, particularly behavior that is difficult to observe, e.g., the way in which a company uses data, whether a particular network management technique discriminates against a competitor, the regulator has to fall back on *ex post* enforcement. The difficulties with *ex post* regulation are well-known, of course, ranging from providing sufficient clarity up-front about what constitutes a breach, to the political difficulty of exacting very occasional but very large penalties from powerful players. In complex contexts, however, the uncertainty about relationships between cause and effect often means that the certainty purportedly offered by *ex ante* rulemaking is illusory.

Since the passage of time and the evolution of markets invariably invalidate the premises of regulation, it is useful to build in checkpoints and termination dates or "sunsets." Most regulations should sunset at a fixed date unless there is a proven need to the contrary. If an open-ended rule is unavoidable, there should be regular opportunities to make the case for its demise. The more detailed a rule, the more likely it is to become obsolete in the face of social, technological, and commercial innovation. Consequently, the more detailed the rules, the more rapidly

89. *Ex ante* punishments can be imposed only on behavior that a traffic cop can observe; so far, at least, that does not include what is going on inside my head. *Ex post* punishments can be imposed for outcomes that can be observed due to behavior that cannot—when what is going on inside my head results in my running a red light and colliding with another automobile. DAVID D. FRIEDMAN, LAW'S ORDER: WHAT ECONOMICS HAS TO DO WITH LAW AND WHY IT MATTERS 75 (2000).

regulations should expire or be revisited. For example, policies about the definition of prohibited speech might change only on the scale of decades, but taxes and requirements on specific technologies, such as an implementation of text access for the deaf, might be obsolete in only five to ten years.

Two caveats are in order. First, a call for flexibility may be taken, wrongly, as a license for ambiguity. On the contrary, clear statements of aspirations and incentives by policymakers will motivate private sector action and yield better results.

Second, it is important to separate outcomes from implementations. Even if policymakers had the expertise to define implementations, these would undoubtedly be a limited, and probably inadequate, sub-set of what the Internet/Web could come up with on its own. Further, as with any complex system, policymakers have only limited control over outcomes. Regulators should therefore focus on ends, not means, and strive to be agnostic about technology and business models. If intervention is necessary, regulation should set performance targets, not specifications. Policymakers should give clear expectations for the time scale over which targets should be met, that is, a "glide slope."

Wireless regulation offers an encouraging precedent for the use of flexible rule-making in communications. Regulators have successfully used a hands-off approach in spectrum allocation in both unlicensed and flexible-use licensed cases. For example, unlicensed allocations have set a few generic limits on device characteristics, such as maximum transmission power, and prohibited harmful interference to licensed services that may share a spectrum band. Device manufacturers and service providers are free to innovate in both technologies and services within these constraints. In the 2.4 GHz ISM band, for example, one finds a plethora of technologies and service models. Flexible-use licensed spectrum, which gives licensees broad discretion in their use of their assignment, has also allowed dramatic innovation such as the conversion of analog to digital networks during the 1990s. These policies have gained momentum as U.S. policymakers and scholars have concluded that "command and control" policies that manage the uses and users of spectrum in fine detail have failed to use resources efficiently.[90]

Overall, regulators can guide outcomes in a positive direction by providing clear statements of what is required overall; setting up appropriate incentives and deterrents without specifying implementations; giving individuals, civil society, and the market time to

90. J.H. Snider, *The Art of Spectrum Lobbying: America's $480 Billion Spectrum Giveaway, How it Happened, and How to Prevent it from Recurring*, NEW AM. FOUND., August 2007, at 39; Thomas W. Hazlett, *Optimal Abolition of FCC Spectrum Allocation*, 22 J. OF ECON. PERSP. 103, 111-115 (Winter 2008).

meet the challenge; and finally, intervening with detailed rules if voluntary action has failed.

C. Delegation

Just as a forest's plants and animals know more about making and running a forest than foresters, the participants that make up the Internet/Web know more about making it work than regulators. Foresters and policymakers are able to exert only limited control over their charges because their time, knowledge, and resources are limited. This limitation is exacerbated by difficulties in tracing cause and effect, which severely complicate diagnosis, prognosis, and prescribing remedies.

Close management is often harmful. Managing single target variables in natural systems leads to slow changes in other ecological, social, and cultural components that can ultimately lead to the collapse of the entire system.[91] For example, effective flood control leads to more human settlement in fertile valleys and large investment in vulnerable infrastructure. When a flood eventually overwhelms the dams and dikes, the result is usually painful. A telecom-specific example of this risk happened with the regulation of international call settlement rates. The management of a single parameter led to instability because high government-protected rates for call termination resulted in competitive international carriers finding ways around domestic incumbents when terminating calls. This reduced incumbent revenue, destabilized their business model, and eroded the cross subsidy of local by international calls. In general, technocratic management of single parameters leads to instability of the entire system.

Control of a system can be achieved only if the repertoire of the controller is at least as great as the variety of the situation to be controlled.[92] Further, the weaker and more uncertain the regulatory capability, the more hierarchy is needed in the organization of regulation and control to get the same result.[93] These systems laws imply that a regulator cannot control a system directly, but rather should work through intermediaries. This accounts for the current control hierarchy in communications policy, where the U.S. Congress enacts general laws and the Federal Communications Commission ("FCC") implements more detailed regulations at the federal level and with analogous structures of delegation at the state and local levels.

One of the benefits of delegation is that it allows discretion and

91. C.S. Holling, Lance H. Gunderson & Donald Ludwig, *In Quest of a Theory of Adaptive Change*, *in* PANARCHY, *supra* note 51, at 6.

92. *See* SKYTTNER, *supra* note 49, at 92 (Ashby's "law of requisite variety").

93. *Id.* (Aulin and Ahmavaara's "law of requisite hierarchy").

expertise, essentials in a world of change and uncertainty. Decentralized searches for consumer benefit are more efficient at finding solutions than central planning. Accordingly, policymakers should rely on firms and civil society first, and regulate only if they fail. Regulators can make consumer action more effective, however, if they require firms to divulge more information in an accessible and meaningful form.

A form of delegation that has attracted renewed attention in recent years is self- or co-regulation.[94] In the typology used by Ofcom, the U.K. telecommunications regulator, *self-regulation* occurs when "industry administers and enforces its own solution to address a particular issue without formal oversight or participation of the regulator or government."[95] *Co-regulation* is a form of regulation where the industry wields the initial oversight responsibility, but that responsibility fits within the ambit of a public agency's regulatory authority. In U.S. usage, self-regulation usually refers to this latter form of industry self-policing through an independent body subject to government oversight: examples include Better Business Bureau's National Advertising Division and the Motion Picture Association of America's ("MPAA") rating system.

Delegation to self-regulatory organizations has been raised as a policy solution in the network neutrality arena. The June 2008 Silicon Flatirons summit concluded that a self-regulatory strategy could effectively address the question of how to determine what constitutes "reasonable network management" and whether that standard of conduct was violated in a particular case.[96] As explained in the report, such a body could create a trusted environment for the development of norms that provide all stakeholders with the increased certainty and predictability that facilitates innovation and technological development. Such a body could also review the reasonableness of network management techniques and provide an environment for developing best practices. It could also develop standards of conduct, provide "advisory opinions" to broadband providers that particular practices are reasonable, and enforce these standards. In this vein, Google and Verizon's "Joint Submission on the Open Internet" supports the creation of a self-governance framework with a backstop of federal government involvement on a case-by-case basis.[97] A key element of their proposal is the creation of technical

94. The approach is not new. An early American exponent was Charles Francis Adams. *See* T.K. MCCRAW, PROPHETS OF REGULATION: CHARLES FRANCIS ADAMS, LOUIS D. BRANDEIS, JAMES M. LANDIS, ALFRED E. KAHN (1984).

95. *Identifying Appropriate Regulatory Solutions: Principles For Analysing Self- and Co-Regulation - Statement*, OFCOM (Dec. 10, 2008), http://www.ofcom.org.uk/consult/condocs/coregulation/statement.

96. PHILIP J. WEISER, FLATIRONS SUMMIT ON INFORMATION POLICY: EXPLORING SELF REGULATORY STRATEGIES FOR NETWORK MANAGEMENT (Aug. 25, 2008).

97. Google and Verizon Joint Submission on the Open Internet, GN Dkt. No. 09-191,

advisory groups that would develop best practices, act as a forum for dispute resolution, issue advisory opinions, and coordinate with standards bodies.[98]

In some cases, there may not be an economic rationale for market participants to address a social problem. This can occur in the provision of Web access to the disabled, for example. A market may also be too fragmented or fractious to come to a solution that has the necessary economies of scale. This was arguably the case with the conversion to digital cellular service in Europe. Regulators may still, however, be able to achieve the desired outcome without having to act simply by taking powers and/or threatening action. For example, the video game industry set up the Entertainment Software Rating Board in 1994 under the threat of Congressional action.[99] Policymakers got the outcome they desired without having to get into the details of defining ratings themselves.

Delegation is not abdication of responsibility. Governments retain the responsibility of ensuring that social goals are met in areas (such as communications) where they have taken on this task. If they have adequately described the end result they seek, as recommended in Section III.B on Flexibility, a basis exists for testing whether self-regulation is leading to the desired outcome. It will also allow third parties to monitor both the regulators and the regulated, and flag regulatory capture.

D. Big Picture

Many properties of the Internet/Web cannot be traced directly to the behavior of a particular part. For example, packet traffic volume depends on the amount of fiber capacity, transport and application technologies, the financial health and business arrangements of service providers, the shifting popularity of particular applications and sites, and legal initiatives. Each of these factors depends on the others and the resultant traffic volume is an emergent property.

More generally, systems have global properties that cannot be predicted by an analysis of their sub-systems. Further, one cannot optimize the system piecewise: if each sub-system is operating at its best, then the system as a whole will not be at maximum efficiency.[100]

WC Dkt. 07-52 (Jan. 14, 2010), *available at* http://www.scribd.com/doc/25258470/Google-and-Verizon-Joint-Submission-on-the-Open-Internet.

98. *Id.*

99. Peter M. Nichols, *Should Video Game Makers Police Themselves? The Issue Sparks a Dispute Between the Industry's Titans, and a Chance of Legislation from Congress*, N.Y. TIMES, Dec. 17, 1993, at D22.

100. SKYTTNER, *supra* note 49, at 92.

Piecewise regulation ignores these emergent properties of a system and will lead to sub-optimal results. Consequently, policymakers should take a holistic view of the potential sources and kinds of solutions to their problems.

A narrow focus reduces the robustness of a managed system. While fires sometimes destroy forests, suppressing them for too long increases the leaf and branch litter that can lead to catastrophic burns.[101] The soil structure and large trees around which forest communities are built survive through medium-sized fires, allowing rapid rebuilding; but in big fires, the soil is sterilized and large trees are felled. Similarly, while occasional disruptions in industry revenue arrangements are uncomfortable for incumbents (and their political protégés) and stressful for entrants, they prevent wrenching restructuring later on. The inflexibility and regulatory capture that results from industry-specific rules can limit competition and reduce welfare, as has been seen in the attempt to protect rural telephone companies from wireless competition, for example.

The Big Picture principle also serves to remind regulators of global considerations that may be discounted while dealing with individual problem cases.

Policymaking should include developing contingency plans for adverse events, particularly low-probability, high-impact scenarios such as the failure of key company or protocol. System resilience can be improved by not operating a system in a regime that is vulnerable to shocks, even if such a system is the most economically efficient. The bigger the downside risk, the less one should optimize for a particular expected case. Finally, policymakers must be wary of the complacency that comes with a mature industry. Resilient systems have good connectivity, but not too much. Overconnecting, a characteristic that comes with maturity, leads to fragility.

Different sectors in the U.S. communication industry are regulated by different titles of the Communications Act. These silos have the advantage of being a sub-set of the entire system, and are thus easier to characterize and control. However, convergence requires that one take a "no silos" approach. One of the challenges of network neutrality has been to find rules that can encompass the telecom, cable, and cellular industries, and the success to date of the Internet Freedoms[102] suggests that a big picture solution can be achieved using a principles-based approach.

"No silos" does not mean "no classification." Regulatory categories

101. Masters, *supra* note 62.

102. Michael K. Powell, *Preserving Internet Freedom: Guiding Principles for the Industry*, 3 J. ON TELECOMM. & HIGH TECH. L. 5, 11-12 (2004).

are unavoidable, as noted in Section I.B above on Convergence. However, in a dynamic context such as the Internet/Web, categories are constantly shifting and changing. Categorization has little lasting value. A principled approach therefore, as advocated here, provides a stable framework within which classification can evolve.

The linkages in the big picture of communications regulation are daunting. While it is essential that all participants in a complex adaptive system, including policymakers, innovate to stay ahead of ever-changing circumstances, every implemented solution has irreversible consequences that are difficult to foresee. Experimentation before deployment can reduce the risks of dramatic failure. Accordingly, trying out new rules in limited geographies is a common approach. System simulation and modeling (see Section IV.A. below), i.e., computational public policy, provides a new way to try out regulatory ideas safely and explore widely-ramified interactions that are difficult to bear in mind at the same time.

E. Diversity

Historically, a lack of bio-diversity has contributed to several agricultural disasters, including the Irish potato famine of 1846, the European wine industry collapse in the late 1800s, and the U.S. Southern Corn Leaf Blight epidemic of 1970. A diverse range of organisms improves the resilience of agricultural and wilderness ecosystems, including their capacity to recover from environmental stress and their ability to evolve.[103]

System diversity consists of having a large variety of different agents with different goals and means at many different scales in time and space. In an industry context, diversity entails nurturing new entrants, both new firms and new industries. Once a tree seedling planted during a wetland restoration has become established, it no longer needs protection from off-trail walkers. Similarly, early stage companies and industries may need protection from competition for a limited time during their infancy, but not once they are on the way to maturity. Diversity of system elements increases resilience by increasing the number of ways a system can resist, and recover from, a shock.

Diversity in a managed system may need to be maintained, particularly in socio-economic systems. The competition that is at the root of the success of markets also provides incentives for firms to establish monopolies, duopolies, or cartels. While market dominance has benefits in terms of standardization, stability, and efficiency, it reduces diversity and thus system resilience. Dominance may also reduce

103. T. Elmqvist et al., *Response Diversity, Ecosystem Change, and Resilience*, 1 FRONTIERS IN ECOLOGY & THE ENV'T 488, 488 (2003).

innovation.[104] It is therefore advisable to constrain the ability of large firms to limit entry by abusing market power.

It may be argued that a reduction in diversity, such as through *de facto* or *de jure* standardization, is beneficial because it allows economies of scale and provides some stability in otherwise chaotic markets. Standardization is a regular feature of the information technology industry: HTTP won out over Hyper-G, TCP/IP overshadowed X.25, and the Windows platform became a monopoly. However, reduction in diversity amounts to an efficiency/resilience trade-off. The resulting system is more efficient, but less resistant to shocks. Differences in regional technology policy can protect diversity, as evidenced by the regulatory standardization on GSM in Europe in contrast to the variety of cellular air interfaces in the U.S.

The European approach to telecommunications regulation provides a framework for encouraging diversity through market entry.[105] If a national regulator finds that a firm possesses Significant Market Power ("SMP") within a defined market, it may impose obligations including transparency, non-discrimination, accounting separation, access to and use of specific network facilities, and price controls. If there is no SMP, such obligations must be rolled back. The current review of the E.U. Framework Directive indicates that European regulators continue to be mindful of diversity as an important component of a healthy communications system. It proposes that regulators will focus their resources on the market sectors in which the dominance of incumbents has been least challenged.[106]

The amplification of citizen engagement with government through Web 2.0 technologies (see Section I.D above) may constitute a step change in the diversity in the Internet/Web policy system. Investment in computation to help make sense of citizen input would therefore improve system resilience. Semantic analysis tools developed to filter spam, mine search queries, collate machine-submitted bug reports, and extract signals

104. The link between firm size and innovation is unclear, particularly when research networks, partnerships, and collaborations are taken into account. For example, Tether casts doubt on the belief that small firms are more innovative, or more efficient innovators, than large firms. B.S. Tether, *Small and Large Firms: Sources of Unequal Innovations?*, 27 RESEARCH POL'Y 725, 726 (1998). Nicholas argues that strong market positions are powerful engines of technological progress, despite market power abuses. Tom Nicholas, *Why Schumpeter Was Right: Innovation Market Power and Creative Destruction in 1920s America*, 63 J. ECON. HIST. 1023, 1024 (2003).

105. J. Scott Marcus, *The Potential Relevance to the United States of the European Union's Newly Adopted Regulatory Framework for Telecommunications* (OPP, Working Paper Series No. 36, 2002).

106. *See, e.g., Main elements of the reform*, EUROPE'S INFO. SOC'Y, http://ec.europa.eu/information_society/policy/ecomm/tomorrow/reform/index_en.htm (last visited Aug. 20, 2010); Matthew Howett, *EU: European telecoms framework review*, OVUM, http://www.ovum.com/news/euronews.asp?id=6374 (last visited Nov. 22, 2010).

intelligence can be used to make sense of a mountain of input. Old technologies should be still be used, but used more intensively: regulators should poll citizens and not just depend on lobbyists and lawyers to tell them what's important.

* * *

Table 2 summarizes the main links between the complex system attributes outlined in Section II.B above and the resilience principles.

Table 2: Complex System Themes and Suggested Principles

	Incomplete Knowledge	Cycles and Transitions	Hierarchy and cross-linking	Novelty and Surprise
Flexibility	X			X
Delegation			X	
Big Picture	X	X		X
Diversity		X	X	

IV. TWO TOOLS IN SERVICE OF THE PRINCIPLES

A provisional, experimental, principles-based approach is appropriate to dealing with complex contexts. However, principles are a starting point for rule-making, not the destination. This section discusses two techniques—one of them new, the other out of fashion—that can be helpful when applying a principles-based approach to governance of rapidly changing situations: simulation and common law reasoning.

A. Simulation

Simulation and modeling use computing to explore the kinds of outcomes that may be possible given a starting point, and alternative strategies gives one a feel for how resilient or fragile different proposed solutions may be.[107]

Simulations of the ICT ecosystem can help to improve policymakers' intuition of non-linear systems with many variables, including the slow ones that humans tend to miss. Exploring the

107. For the purposes of this paper, I will not distinguish between simulation and modeling. *See, e.g.*, Gene Billinger, *Modeling & Simulation: An Introduction*, MENTAL MODEL MUSINGS, http://www.systems-thinking.org/modsim/modsim.htm (last visited Aug. 9, 2010).

consequences of policy choices in simulation can identify which courses of action are most robust under a variety of possible outcomes. Policy simulation allows decision-makers to "sweat in training rather than bleed in combat." It can eliminate policy choices that are brittle and work in only a narrow set of circumstances, leading to more resilient final measures. Since any solution embodies a set of assumptions and biases, constructing a wide range of simulations can expose hidden preconceptions. Simulation can also be a part of resulting regulation. For example, Ofcom uses modeling of radio signal propagation rather than measurement to determine whether Spectrum Usage Rights licensees are guilty of causing harmful interference with other licensees.[108]

This field of practice is just emerging. I provide here only a brief survey of applications in ICT to give a flavor of the possibilities; more examples are given in my article, *Internet Governance as Forestry*.[109]

A variety of modeling techniques are available. The emerging discipline of systems dynamics seeks to understand the behavior of complex systems through simulating the many interlocking, sometimes time-delayed, relationships among its components.[110] It focuses on stocks and flows,[111] with feedback loops among participants. For example, ChintanVaishnav "uses a system dynamics model to study the dynamic complexity surrounding the current VoIP regulation and to understand policy options for preventing undesirable outcomes."[112]

A number of social scientists have turned to agent-based modeling and simulation to examine social phenomena.[113] Agent-based modeling simulates the interactions of many autonomous individuals on a network.[114] Oleg Smirnov and Allan T. Ingraham used agent-based computation to "model news dissemination in large media markets."

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108. *See, e.g.*, William Webb, *Licensing Spectrum: A Discussion of the Different Approaches to Setting Spectrum Licensing Terms*, Dec. 2009.

109. *Governance as Forestry*, *supra* note 12.

110. STERMAN, *supra* note 51, at Section 2.3.4.

111. A "stock" is the amount of a business asset at a point in time, while a "flow" measures the change over a period. *See, e.g.,* Glenn Harrison *Stocks and Flows*, *in* THE NEW PALGRAVE DICTIONARY OF ECONOMICS 290 (Steven Durlauf & Lawrence Blume eds., 2nd ed. 2008).

112. Chintan Vaishnav, The End of Core: Should Disruptive Innovation in Telecom Invoke Discontinuous Regulatiory Response? (Oct. 6, 2009) (unpublished Ph.D. dissertation, Mass. Inst. of Tech.), *available at* http://web.mit.edu/chintanv/www/Publications/Chintan%20Vaishnav%20Proposal%20Abstract.pdf.

113. *See* Robert J. Lempert, *Agent-Based Modeling as Organizational and Public Policy Simulators*, 99 PROC. NAT'L ACAD. SCI. U.S. 7195 (2002); *see also* Brian J.L. Berry, L. Douglas Kiel, & Euel Elliot, *Adaptive Agents, Intelligence, and Emergent Human Organization: Capturing Complexity through Agent-Based Modeling*, 99 PROC. NAT'L ACAD. SCI. U.S. 7187 (2002).

114. JOSHUA EPSTEIN & ROBERT AXTELL, GROWING ARTIFICIAL SOCIETIES: SOCIAL SCIENCE FROM THE BOTTOM UP 4 (1996).

Such a model could also be used to study issues of interests to policymakers, such as the effects of media consolidation or closure.[115]

Simulation has so far not been widely used to explore the consequences of telecommunications policy decisions. Johannes M. Bauer, however, has explored the innovation incentives of network operators and content providers by using scenario thinking and simulation models to analyze the dynamics of various network neutrality policies.[116] He offers a stylized model with subtle and nuanced qualitative discussion. Bauer and Kurt DeMaagd also used genetic programming techniques to model the co-evolution of platform operators, content providers, and consumers subject to specific policy rules governing the interactions.[117]

Research funding institutions have taken note. The Science of Science and Innovation Policy ("SciSIP") program of the National Science Foundation has taken an interest in the use of agent-based modeling in understanding how policy can affect science and engineering research.[118] Also in Europe, Objective 7.3 of the Seventh Framework Programme, "ICT for Governance & Policy Modelling," includes a focus "on advanced tools and technologies to perform large-scale societal simulations."[119]

B. Common Law Reasoning

At some point, principles have to be turned into decisions and details. Accordingly, the common law's use of fact-finding in the service of applying (and evolving) established principles is a necessary complement to a principles-based regulatory philosophy. The common law adapts to changing circumstances as well or better than any other kind of regulation and allows flexibility without vagueness. For some time now and in the face of a mountain of obsolete statutes, legal

115. Oleg Smirnov & Allan T. Ingraham, *Social Networks and the News: An Agent-Based Model of a Media Market* (Working Paper Series, 2008) *available at* http://ssrn.com/abstract=1354142.

116. Johannes M. Bauer, *Dynamic Effects of Network Neutrality*, 1 INT'L J. COMM. 531, 531 (2007).

117. Johannes M. Bauer & Kurt DeMaagd, *Network Management Practice and Sector Performance: A Genetic Programming Approach* (Mich. St. Univ., Working Paper No. 08-02, 2008).

118. *See* Science of Science and Innovation Policy (SciSIP), NAT'L SCI. FOUND., http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501084&org=SBE (last visited July 14, 2010); *see also Award Abstract No. 0915657*, NAT'L SCI. FOUND. (2009), http://www.nsf.gov/awardsearch/showAward.do?AwardNumber=0915657&WT.z_pims_id=501084 (awarding funding for Axtell's project "Co-Evolution of Innovative Products by Purposive Agents and the Growth of Technological Complexity").

119. *7th Framework Programme for Research (2007-2013)*, EUROPEAN COMM. INFO. SOC'Y, http://ec.europa.eu/egovernance (last visited on Dec. 10, 2010).

scholars have proposed common law as a solution.[120] In a paper on reforming the FCC, Jonathan Sallet proposes a return to common-law reasoning. He argues that since "innovation is the cornerstone of long-term economic growth, the 21st Century common-law is advantageous because it is itself a good way of creating innovative public policies," and is also "a sensible method of adapting government oversight to changing technological and economic conditions."[121]

Congress, in enacting laws, and the FCC, in creating broad rules, should create principles that provide general guidance about the values to be protected. Decisions should then be delegated to adjudicators who apply those rules in a common law fashion, creating a body of precedent. This is a recursive process: Congress delegates the authority to work out some principles to the agency, and then the agency rule-making function delegates the detailed decision to administrative law judges ("ALJs"). If it is politically infeasible to allow the ALJs to rule, then the Commission could ask ALJs to find facts only (and not offer legal interpretations). Ideally, however, the ALJs should be given the task of both finding the facts and recommending the legal analysis to the FCC.

CONCLUSIONS

This paper argues that the Internet/Web is a complex adaptive system. Insights from the theory and practice of managing such systems, particularly managing natural ecosystems, provide useful guidance for policymakers. An analysis of the Internet/Web in terms of managed complex adaptive systems suggests a new framework for understanding the current transformation of ICT and its regulation.

Well-known attributes of the Internet/Web support its characterization as a complex adaptive system. For example, the transformations observed in ICT resemble the cycles and transitions of adaptive systems: modularity, convergence, and decentralization are cyclical changes, and the rise of the "third sector," faster tempo, and increased scale are step changes. Three other key characteristics of such systems are also observed on the Internet/Web: incomplete knowledge, hierarchy and cross-linking, and novelty and surprise.

Ecosystem management theory has had to reconcile complex

120. GRANT GILMORE, THE AGES OF AMERICAN LAW (1979); GUIDO CALABRESI, A COMMON LAW FOR THE AGE OF STATUTES (1985); Edward J. Imwinkelreid, *A More Modest Proposal than "A Common Law for the Age of Statutes": Greater Reliance in Statutory Interpretation on the Concept of Interpretative Intention*, ALB. L. REV. (forthcoming) *available at* http://ssrn.com/abstract=684251.

121. Jonathan Sallet, "New Products At Every Stage" – The Application of Common-Law Reasoning in an Age of Innovation (2009) (unpublished manuscript), *available at* http://fcc-reform.org/response/new-products-every-stage-application-common-law-reasoning-age-innovation.

biological dynamics with relentless political intervention and is thus a fruitful source of lessons for Internet/Web policy. The findings of systems theory and ecosystem management are encapsulated in four "Resilience Principles" that can help Internet/Web policymakers balance competing demands for stability and innovation. These are (1) flexibility (determine ends not means), (2) delegation (give markets and society the first shot at solving problems), (3) big picture (take a holistic view of the problem), and (4) diversity (encourage competition and market entry).

The fundamental assumption of this approach is that stasis is impossible, but resilience is achievable. These principles foster resilience in the following ways:

> **1. Diversity**. A variety of participants ensures that a local collapse leads to a rapid restart of system function by facilitating entry of newcomers in times of disruption. If there is a monopoly, particularly at a variety of system scales, then a failure is likely to cause widespread disruption.[122]
>
> **2. Flexibility**. Technology- and business model-neutral policy will stimulate diversity, which will improve resilience. Incorporating the possibility of unexpected events into regulatory frames, rather than simply optimizing for a single scenario, will lead to more robust policies.
>
> **3. Delegation**. Allowing sub-systems to evolve at their own pace allows different parts of the system to be at different stages of maturity. If surrounding parts of the value chain are stable when one is disrupted, the overall system will continue to function. Clear goals focus participants on long-term outcomes and sustain momentum through periods of creative collapse and renewal. Policy expiration dates remove unused regulations and reduce the possibilities of unexpected interactions.

122. Diversity, both social and ecological, is an important determinant of ecological resilience in rangelands, which are regions between deserts and agricultural zones where people make their living from pastoralism. Examples include: the juxtaposition of soils with differing abilities to accept and store rainfall enables vegetation on some soils to survive through periods of sparse rainfall and on others to grow well under conditions of higher rainfall; plant communities with high species richness with functional types (groups) of species ensure a variety of responses to different environmental disturbances; mixed grazer and browser animal populations increase forage and marketing options, reduce drought risk, and slow shrub encroachment; diverse enterprises linked to different markets and requiring different weather conditions reduce risk; a range of energy sources (human labor, horses, oxen, fossil fuels) widens resource-use opportunities; a relatively large workforce with a mix of ages and sexes expands adaptive opportunities; having access to a region with spatially variable climate enables survival through mobility; having access to diverse land systems at regional scales offers a range of opportunities in time and space. Walker & Abel, *supra* note 51, at 309-12.

> **4. Big Picture**. Seeking the health of the communication system on a broad scale rather than narrowly optimizing for the interests of particular incumbents allows for more flexibility and experimentation, attributes that enhance resilience. Ensuring that different system scales are not too tightly coupled, for example by limiting vertical integration, prevents disruption at one scale from causing a system-wide collapse.[123]

The precise formulation of the principles matters less, however, than the principle-oriented philosophy that underlies them. The same premises may lead others to different taxonomies, but a principles approach is likely to remain.

The approach proposed here leans towards *laissez faire*, but has a clear role for government. The model is not that the Internet/Web is a pristine wilderness, untouched by human hands and "red in tooth and claw." Rather, it is a managed ecosystem where societal needs and human agency contend with the self-organizing complexity of the biological system.

123. This is widely seen in political systems, where different parts of government are replaced at different rates. In the U.S., for example, federal elections are held every two years for Congress, four years for President, six years for the Senate, and federal judges have life-time appointments.

APPLYING COMPLEXITY THEORY TO POLICY MAKING: A COMMENT ON "THE RESILIENCE PRINCIPLES: A FRAMEWORK FOR NEW ICT GOVERNANCE," BY PIERRE DE VRIES

MARC BEREJKA[124]

I own a shelf-full of popular science books on complexity theory. I find them extremely enlightening in that they attempt to describe the general principles that shape the behavior of real-world, highly interactive and ultimately unpredictable systems. Our minds instinctively seek out understanding. Over the course of the centuries, we have become quite good at using our reasoning power to explain natural phenomena and at exploiting that understanding to improve our welfare. Our reasoning power, however, can disserve us when we fail to see its own limits—when we bake into our analyses assumptions about human behavior or other natural phenomena that, while convenient, are overly simplistic. At the micro and macro level, natural systems are regularly subject to multiple forces pulling them in competing directions and, so, outcomes are frequently, highly uncertain. Here is where complexity theory steps in. While it disavows predictive power, it does provide insights for understanding the nature of change, i.e., how highly interactive, adaptive systems move from periods that seem in equilibrium, through disruptions, and into new equilibria.

Many of the books on complexity available at retail also promise insights into how the theory can improve public policymaking. I have voraciously consumed these books, building up my basic understanding of complexity while anxiously awaiting the closing chapter on how the theory can help us make better policy decisions—only to be disappointed. These works make the point that, yes, complexity theory can improve our decision making, but they fail to describe how. They offer little guidance in terms of "applied complexity."

Pierre de Vries and I have been talking for several years about how complexity theory can improve policymaking, especially in the highly dynamic Internet/Web space. I applaud him for joining what seems to be a small but growing community of academics and other writers looking to develop the field of applied complexity.

This community has two branches. The larger "simulators" branch seems to be building up its capabilities and bona fides quite impressively. These are the multi-disciplinary intellectuals who are also experts in

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computer programming. They couple their programming prowess with today's massive computing capability to run thousands (if not millions) of iterations of scenarios with baked-in uncertainty in order to see what patterns and local equilibria emerge. De Vries has placed himself on the other, less well-developed branch—the one that seeks to extrapolate guiding principles for decision makers from complexity theory in realms that are too complex to simulate (at least for the foreseeable future). In fact, it is quite possible that De Vries's piece is the first, or among the first, to plumb the depths of complexity theory not just to understand the contours of highly interactive systems, but to take that awareness and, from it, articulate meta-rules for policymaking.

De Vries refers to these rules-for-making-rules as "resilience principles." Those principles urge policymakers who are attempting to shape, but not frustrate, progress in the Internet/Web space to: (1) embed ***flexibility*** in their decisions; (2) ***delegate*** the development of norms and enforcement of them, wherever possible, to more knowledgeable players who are closer to the action; (3) maintain a ***big-picture*** view of the problem set; and (4) encourage, or at least accommodate, ***diversity*** in policy solutions. For those immersing themselves in De Vries's piece, I have two suggestions—one for follow-on researchers and the other for all readers.

In terms of follow-on research, I hope the nascent applied-complexity community can look back at real-life policy challenges for lessons that either shore up, add nuance to, or challenge De Vries's work. For instance, those policymakers in the United States Government who, for more than a decade now, have been in a position to shape the rules of the road for the domain name system seem to have been generally, albeit unwittingly, following Resilience Principles. Over a decade ago, the United States Government officially *delegated* the governance role for the DNS to ICANN, and more recently, ICANN rearticulated its own commitment to constantly incorporate stakeholder views into its policies—moving the policymaking process even closer to those most affected by ICANN decisions. Moreover, it is clear that the relationship between the USG and ICANN, and with other stakeholders, has manifested *flexibility* and a *big-picture* perspective over the course of time. And ICANN has long aspired to accommodate a *diversity* of global needs in managing the DNS subject, of course, to the paramount interest in maintaining DNS stability. I am optimistic that a fuller examination of the Internet/Web realm will yield other examples of how resilience-oriented policymaking has yielded positive results.

For the general audience, De Vries recaps the attributes of complex adaptive systems, and he mentions "emergence of order" as one of those properties. To me, the emergence of order is one of the most fascinating

and important attributes of complex adaptive systems. The notion is that despite life's many conflicting tensions, order does emerge on a regular basis. How order will emerge is impossible to predict, but from within the tumult of our existence and notwithstanding the constancy of change, we rarely find ourselves living in true chaos.

In the social realm, we consciously develop law or other formal rules to foster order. More frequently, in the interstices between law and the vast unregulatable space of normal life, behavioral norms emerge. These norms can be beneficial, they can be annoying or harmful, or they can present a mixed picture. For example, the invention of spam as an online marketing tool has spawned a bundle of norms, *de facto* and *de jure*, that now shape the business of e-mailing millions of messages to Internet users. They include a range of technical measures aimed at limiting spam's impact, expectations for a tolerable level of spam in your in-box, devious efforts to evade anti-spam measures, as well as attempts to govern commercial e-mail by law. I think it is fair to say that after a tumultuous period of years, we now live in a new state of commercial e-mail equilibrium bounded by this bundle of norms. The state-of-affairs of this new order may not be ideal, but it is tolerable for most consumers, and certainly the situation is not perfectible.

So for me, one of the key take-aways from De Vries's work is that it provides those of us in the policymaking realm with guidance on how we might assist the complex adaptive system we know as the Internet/Web to evolve towards more salutary equilibria. How can policymakers assist in the development of positive norms as new manifestations of order emerge?

I use the word "assist" deliberately. The Resilience Principles have baked into them the notion that prescriptive, technology-specific regulations are likely to do more harm than good. The ambitions of policymakers should be more modest, to nudge along an inherently dynamic process in a mostly beneficial direction. As a corollary, the Resilience Principles provide guidance to what De Vries calls "the third sector" on how to avoid overly constraining regulation. Corporations, NGOs, and the like can assist the policymaking process by consciously developing and promoting adoption of salutary norms that are part of a new order and that, in turn, obviate the need for more cumbersome governmental intervention.

Ultimately, I am drawn to complexity theory and the Resilience Principles, and I hope other readers are too, because of my concern that traditional mechanisms of government intervention are simply not resilient enough for the dynamism of the Internet/Web. The traditional means, be they new laws or regulations, are like the hammer, and those wielding the hammer may at times feel they have no option but to see a

social problem on the Internet/Web as a nail. The only question is when to strike the hammer to the nail head. Of course, the Internet/Web requires a much more sophisticated policymaking approach. The Resilience Principles offer a path for how we might describe and promote that approach.

A COMMENT ON "THE RESILIENCE PRINCIPLES: A FRAMEWORK FOR NEW ICT GOVERNANCE," BY PIERRE DE VRIES

BRAD BERNTHAL[125]

"The Resilience Principles" article's focus upon system dynamics—and, more specifically, complex adaptive systems—dislocates the existing paradigm of telecommunications regulation. While other scholars and thinkers have observed systems-like aspects of the *object* of regulation (*e.g.*, the Internet "ecosystem"), few have gone as far as Pierre de Vries in diagramming what *management* of systems might suggest for regulatory agents and the institutions that they work within.

A critical question is whether the article is correct in its premise that the object of regulation, Information Communications Technology, is a "complex adaptive system" akin to complex systems in the natural world. The suggested connection between ICT and natural systems may be understood in at least three different ways: (1) definitional; (2) metaphorical; and (3) literal. To a certain degree the article posits that ICT and natural systems are alike along each of these three dimensions. As a definitional matter, the question is not particularly interesting, as it formally turns on socially constructed definitions. The metaphorical and literal dimensions, however, are more interesting to unpack.

As a metaphor, the analogue has appeal. There are certainly elements of ICT that are *like* and *resemble* natural systems. Highlighting these resemblances suggests useful understandings. The article's Section II ("Insights from Managing Complex Adaptive Systems") provides a stimulating set of ideas. Awareness of complex and chaotic contexts, mathematical tools for modeling systems, and the four resilience principles are potentially helpful management tools that regulators could adopt and adapt. Such management techniques suggested by an adaptive systems approach could easily have utility in communications regulation. Such utility does not necessarily hinge on literal connections between ICT and the natural world.

A stronger view of literal parallels between complex adaptive systems in ICT and the natural world, however, is more difficult to embrace. One is reminded of Benjamin Cardozo's admonition that metaphors in law can be useful, but that they should "be narrowly watched, for starting out as devices to liberate thought, they end often by enslaving it."[126] Fundamentally, the construct of a *complex adaptive system*

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126. Berkey v. Third Ave. Ry. Co., 155 N.E. 58, 61 (N.Y. 1926). For a similar comment by Justice Frankfurter, *see* Tiller v. Atlantic Coast Line R.R. Co., 318 U.S. 54, 68 (1943).

is itself, of course, a mental model. The fact that this mental model is capacious enough to suggest characteristics common to two systems should not go further and overlook notable differences between the underlying phenomena in each system. For example, the nature of "collapse" of a natural ecosystem through catastrophic fire is different than the "collapse" of ICT through, say, disruptive innovation. In a natural fire, the physical substance of the biological ecosystem is altered; in ICT, the nature of the "collapse" is more conceptual (viz., a "market" is disrupted) than it is biological (viz., the physical substance may be rendered less valuable, but it is not physically altered). Failing to keep track of such differences could lead to importing principles of complex adaptive system in instances where they could be unhelpful or even pernicious.

The strength of de Vries's article is precisely the way that it dislocates familiar paradigms for communications regulation. Liberated thinking often emerges when a qualitatively different approach is suggested. *The Resilience Principles* accomplishes this by jarring loose familiar assumptions and frameworks and, into the breach, proposes a vocabulary and mental model of *regulation as systems management*, which is novel and challenging. It is a fresh perspective that works best when understood as a policymaking metaphor which suggests a set of management tools that are underexplored today.

COMMON LAW FOR UNCOMMON RESULTS: A COMMENT ON "THE RESILIENCE PRINCIPLES: A FRAMEWORK FOR NEW ICT GOVERNANCE," BY PIERRE DE VRIES

JONATHAN SALLET[127]

Near the mid-point of his paper on the Resilience Principles, Pierre de Vries offers the following thought: ". . . [T]he best response to an uncertain and ever-changing situation is to accept it and aim at resilience rather than efficiency. Any diagnosis and prescription should always be provisional and made with the knowledge that it will have to be changed."[128]

That assertion is both true and fundamental. It is true not merely on a transcendental level, but as a hard-nosed understanding of the reality in which governance decisions affecting the Internet are being made. The challenge, in my view, is to incorporate common-law reasoning as a critical part of the process of "resiliency"; a process that requires additional consideration of two important questions: What would be the source of common-law principles to be used when such a system commences, and who will play the role of a common-law "judge?"

Answering those questions requires an appraisal of the context in which regulatory principles are being constructed. In earlier times, regulation did not need to move at the speed of light because the underlying technologies of regulated industries were relatively stable. In the first sixty years of significant railroad competition in the United States, technological innovations were adopted (like the substitution of steel for iron rails), but the changes were, more than anything else, designed to squeeze additional efficiency out of an established system.[129] Copper telephone wires, first used for long-distance telephony in 1884,[130] remained the basic technology used for connecting homes to the telephone network through the end of the 20th century, and the copper loop remains the technology that continues to support DSL-based Internet access.

Of course, great changes occurred in these long periods of time, but the pace was, by today's standards, slow. Conversely, in the last decade

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128. *Supra* p. 159.

129. Steven Usselman, *Running the Machine: The Management of Technological Change on American Railroads, 1850-1910*, 17 BUS. & ECON. HIST. 213 (1988).

130. *Long Distance Telephone History*, CYBERTELECOM, http://www.cybertelecom.org/notes/long_distance.htm (last visited July 14, 2010).

the nature of technologies that contribute to the Internet experience has evolved rapidly, from the deployment of fiber-based and wireless broadband networks through the creation of many new forms of devices (like the iPod/iPad and netbook computers) to the creation of new forms of "cloud"-based computing to the invention of countless applications (and almost as many home-made videos posted on YouTube).

This is not to confuse cause and effect. Of course, new technologies have significant ripple effects on society. The introduction of railroads in the 19th century had large impacts on the nation, from the way we tell time to the organization of corporations. But, as Pierre rightly emphasizes, the Internet today is a complex adaptive system in which the inputs to the consumer experience necessarily involve hardware, software, applications, devices, server farms, and more. Change is rapid, the variables in solving any single "equation" of consumer value are shifting, and the future is, therefore, shrouded in deep uncertainty. It is as if the Heisenberg uncertainty principle, which limits our ability to predict the position and movement of even a single particle, were being applied simultaneously to many particles in an attempt to map the position and predict the trajectories of each of them separately and simultaneously as they move and interact.

What to do? Are we caught in the cross-fire between certainty of future outcomes, favored by people who want to know how to adjust their behavior and expectations to follow the rules, and *ad hoc* decision making, which provides maximum flexibility but little guidance?

I have suggested the use of common-law reasoning as a solution to the seeming dilemma; an approach that focuses on finding the facts, asking whether they are same or different from the factual basis of previous rulings, recognizing the larger principle that has arisen from prior rulings and, of course, deciding whether such a principle requires modification in light of the newly-adjudicated facts.[131]

But the two issues noted above must be addressed for common-law reasoning to be successfully employed: What would be the source of common-law principles to be used when such a system commences, and who would play the role of a common-law "judge?" Both are important, of course, because effective answers to both must be in place for a system of governance to have the "resilience" that Pierre de Vries rightly recommends. Let me briefly address each issue:

First, the quest for the balance between certainty and flexibility is to be found in the balance between principles (which can also be characterized as "norms") and case-by-case adjudication, leavened by the use of "sunset" provisions. Consider, for example, the protection of

131. Sallet, *supra* note 121.

speech in the United States Constitution. "Congress shall make no law," it says, "abridging the freedom of speech, or of the press."[132] That is a fundamental principle whose interpretation over the last two hundred years has sparked questions that include: What is speech? When is speech nonetheless "action" that Congress can regulate? What speech, if any, is not within the scope of the principle? Whose speech is protected? What does it mean to say that Congress can make "no law?"

Here, the principle embodied in the First Amendment provides fundamental guidance. The case law applies that principle both to unresolved issues and to forms of communication, like the Internet, that did not exist at the time of the ratification of the Constitution.

In the world of Internet governance, two obvious sources for the creation of principles come to mind. An expert body can "borrow" from prior precedent. So, for example, in the world of competition policy, future decisions could be based on past adjudications under Section 5 of the Federal Trade Commission Act. Or, Congress could enact a new legal standard, much in the manner that the program-access rules were designed to apply competition-policy principles to a particular set of vertical relationships. Either way, it is important that the "first principles" come first and that they be expressly adopted with debate and discussion of their purpose and potential application. Of course, and this is in keeping with the nature of uncertainty described above, the principles should avoid regulatory "lock-in" that could spawn unexpected side effects or render them as quickly obsolete. Indeed, obsolescence is the reason that such legislation should be subject to a "sunset" provision of, say, five years. So that Congress can return, examine the case-by-case results, and determine whether amendment of the first principles is needed.

Second, we need effective administrative processes to implement the common-law approach.[133] That may seem like an oxymoron to some, but there are effective ways to improve and apply current practices. One example of a robust administrative system designed to find facts can be found in the Federal Trade Commission. A system to be used effectively in pursuit of effective Internet governance should, it seems to me, (i) gather data from informed sources, including technical expert bodies of the kind used in standards-setting processes, (ii) use administrative law judges to conduct rigorous factual proceedings, (iii) move quickly, (iv) permit the issuance of effective short-term injunctive orders, and (v) consider the use of private processes, such as arbitrations, in order to gain

132. U.S. CONST. amend. I.

133. I have written about this at slightly greater length in *Principles for Governmental Action in a Broadband World* (Econ. Policy Inst., Working Paper No. 273, 2005), *available at* http://www.epi.org/publications/entry/wp273.

greater efficiency.

Of course, both of these points are worthy of greater analysis, but the purpose of the exercise seems clear. At a time of great change when we need governance principles to develop an uncommon ability to be simultaneously principled and clear, and fact-based and flexible, the common law offers an important way forward.

ALMOST FREE: AN ANALYSIS OF ICANN'S 'AFFIRMATION OF COMMITMENTS'

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INTRODUCTION

On September 30, 2009, the United States Department of Commerce ("DOC") and the Internet Corporation for Assigned Names and Numbers ("ICANN") signed an "Affirmation of Commitments"[1] ("Affirmation") that purports to recast the public–private relationship at the heart of the management of the domain name system ("DNS"). ICANN trumpeted this document as a culmination of the move from public to private control of the DNS, one that ICANN said "completes a transition that started 11 years ago" and "places beyond doubt that the ICANN model is best equipped to coordinate" the DNS.[2] ICANN's CEO Rod Beckstrom summarized ICANN's commitments in the Affirmation as follows: "It commits ICANN to remaining a private not for profit organization. It declares ICANN is independent and is not controlled by any one entity. It commits ICANN to reviews performed BY THE COMMUNITY—a further recognition that the multi-stakeholder model is robust enough to review itself."[3]

This article examines the legal and political effects of the Affirmation. It begins by asking what the Affirmation actually changes in light of the pre-existing ICANN–DOC relationship. It then asks what these changes tell us about ICANN's current legal status and about its future. It concludes that even though the Affirmation has been over-hyped, the agreement is nonetheless a significant milestone in the evolution of the management of the DNS—but more for its political than its legal import. As a legal matter, the DOC allowed one of its main agreements with ICANN to lapse, thus surrendering the most formal and visible legal control the DOC had over ICANN. In so doing, the DOC gave up its reversionary interests in contracts ICANN had with third parties—the DOC's right to require ICANN to assign those

1. *See* ICANN, AFFIRMATION OF COMMITMENTS BY THE UNITED STATES DEPARTMENT OF COMMERCE AND THE INTERNET CORPORATION FOR ASSIGNED NAMES AND NUMBERS (2009) [hereinafter AFFIRMATION] (reprinted in Appendix). It is almost required in a paper of this nature to quote Jeremy Rabkin's quip that an "Affirmation of Commitment . . . sounds a lot like marriage vows exchanged by same-sexers in a state where gay marriage is not yet legal." Milton Mueller, *Ask Us About ICANN's, Um,* "*Affirmation,*" INTERNET GOVERNANCE PROJECT BLOG (Sept. 29, 2009, 03:02 PM), http://blog.internetgovernance.org/blog/_archives/2009/9/29/4336686.html (quoting Jeremy Rabkin). In other words, the Affirmation reflects an attempt between a government and an NGO to make a public commitment while also making a private agreement that the law does not necessarily welcome into traditional legal categories—here contract and administrative law—as warmly as the parties might wish.

2. *The Affirmation of Commitments – What it Means*, ICANN (Sept. 30, 2009), http://www.icann.org/en/announcements/announcement-30sep09-en.htm.

3. *Id.* (capitalization in original).

contracts to someone else were the DOC ever to lose faith in ICANN. In exchange, ICANN promised to remain located in the U.S., thus remaining subject to U.S. jurisdiction. ICANN also committed itself to a lengthy round of accountability exercises, although whether these will amount to anything substantive is not obvious. Furthermore, ICANN again expanded the role of its Government Advisory Committee ("GAC"), a committee of government representatives open to every nation, which has a direct channel to the ICANN Board as well some agenda-setting powers.

If these changes are less legally earthshaking than the parties might have sought to make them seem, their political import is nonetheless real. By allowing its most visible agreement with ICANN to expire, the DOC made a tangible—if still incomplete—response to growing international pressure for the U.S. to abandon the control over ICANN that other nations feared gave the U.S. a dominant role over the DNS. ICANN enjoys significantly more independence after the Affirmation than it had before. And the GAC, the only direct means by which non-U.S. governments can influence ICANN, emerges from the Affirmation stronger as well.

The article then revisits two underlying issues that the Affirmation papers over: what standby or fail-safe control the United States retains over the DNS, and to what extent that (or any) control over the DNS matters. Here the picture is less clear, but some of the answers are surprising: the U.S. retains a lessened, but still real, degree of control over the DNS—but it may not matter as much as many of us think. The possible risks of having a body—be it public or private—in charge of the DNS can be grouped into four categories: (1) primarily economic issues involving market power over DNS service providers (registrars and registries), (2) economic power exercised over registrants and other third parties, (3) more general political power over speech or other uses of the Internet, and (4) geo-strategic. Some of these, notably the economic risks, the article argues, are much more real dangers than others. In particular, the article asserts, the geo-strategic risk has been greatly exaggerated.

Readers are assumed to understand the technical basis of the DNS.[4]

4. Readers seeking an introduction to the DNS will find one, among other places, in Part I of A. Michael Froomkin, *Wrong Turn in Cyberspace: Using ICANN to Route Around the APA and the Constitution*, 50 DUKE L.J. 17, 37-50 (2000).

I. THE AFFIRMATION OF COMMITMENTS IN CONTEXT

A. A Short History of the ICANN–DOC Relationship

More by accident than design, in the late 20th century the United States Government found itself with de facto and also probably legal control of the DNS. Oddly, at the time, this did not feel like an unmitigated blessing as it thrust the U.S. Government into controversies that seemed to have no politically palatable solutions.

In the 1980s and earlier, control of a small network used primarily by academics[5] was of little interest to most people. But as the Internet began to be commercialized in the late '80s and early '90s, and as its growth accelerated, DNS issues became more contentious and began to concern even the White House.[6] Proposals to create new top-level-domains ("TLDs") ran into opposition from organized trademark-holders who already were concluding that the existing DNS was an obstacle to their legal rights and brand-management objectives. Creating new TLDs threatened more cybersquatting and more trademark disputes, and they wanted none of it. On the other side, would-be registries (the people with the authoritative database of domain names in each TLD) and registrars (the people who sell[7] domain names to end-users) wishing to enter the domain-name-selling market sought more names to sell, while firms who found themselves a little late to the Internet party wanted short memorable names. Both sides looked increasingly to the White House to solve their problems, and the White House, in the person of Ira Magaziner, wanted to get rid of the (to this day unsolved) problem as fast as possible.[8]

On June 5, 1998, the National Telecommunications and

5. On the early history of the Internet, *see* KATIE HAFNER & MATTHEW LYON, WHERE WIZARDS STAY UP LATE: THE ORIGINS OF THE INTERNET (1998).

6. *See id.* at 24.

7. Or lease, but let's not get into that debate. Readers wishing to know more may consult Anupam Chander, *The New, New Property*, 81 TEX. L. REV. 715, 776-781 (2003) ("Understanding domain names as property accords with how they are treated in practice."); Juliet M. Moringiello, *What Virtual Worlds Can Do for Property Law*, 62 FLA. L. REV. 159, 179 (2010) (discussing the Virginia Supreme Court's conclusion in Network Solutions, Inc. v. Umbro Int'l, Inc., 529 S.E.2d 80, 86 (Va. 2000) that a domain name represents a service contract, not property subject to garnishment); Xuan-Thao N. Nguyen, *Commercial Law Collides with Cyberspace: The Trouble with Perfection – Insecurity Interests in the New Corporate Asset*, 59 WASH. & LEE L. REV. 37, 65 (2002) ("The classification of domain names as either property or contracts is an issue of first impression with which courts have struggled."); Xuan-Thao N. Nguyen, *Cyberproperty and Judicial Dissonance: The Trouble with Domain Name Classification*, 10 GEO. MASON L. REV. 183, 186 (2001) (recognizing domain names as intangible property).

8. *See* Froomkin, *supra* note 4, at 24 (describing creation of inter-agency task force headed by Magaziner).

Information Administration ("NTIA") of the DOC issued a policy statement, the "White Paper," calling on private sector Internet stakeholders to form a not-for-profit corporation to take over the administration of the DNS and the Internet numbering system.[9] On October 26, 1998, ICANN was incorporated as a California not-for-profit corporation, and it then asked the DOC to choose it as the DOC's private partner.[10] After a number of complexities that need not detain us now,[11] on November 25, 1998, the DOC chose a somewhat modified ICANN to be its partner or agent[12] and basically handed ICANN de facto control over the DNS.

The legal basis of the original ICANN–DOC relationship rested on three agreements: (1) a Memorandum of Understanding ("MOU"),[13]

9. Notice, Management of Internet Names and Addresses, 63 Fed. Reg. 31,741 (June 10, 1998) [hereinafter White Paper].

10. Letter from Jon Postel to Hon. William M. Daley, U.S. Sec'y of Commerce (Oct. 2, 1998), *available at* http://www.ntia.doc.gov/ntiahome/domainname/proposals/icann/letter.htm.

11. For details, see MILTON L. MUELLER, RULING THE ROOT: INTERNET GOVERNANCE AND THE TAMING OF CYBERSPACE (2002); Froomkin, *supra* note 4, at 82-84.

12. For a discussion of the modifications and the surrounding complexities, see MUELLER, *supra* note 11, at 183-208; Froomkin, *supra* note 4, at 82-88.

13. MEMORANDUM OF UNDERSTANDING BETWEEN THE U.S. DEPARTMENT OF COMMERCE AND INTERNET CORPORATION FOR ASSIGNED NAMES AND NUMBERS, http://www.icann.org/general/icann-mou-25nov98.htm (last updated Dec. 31, 1999) [hereinafter MOU]. The MOU had quite a history. It was originally due to expire on September 30, 2000. *See id.*; ICANN, AMENDMENT 1 TO ICANN/DOC MEMORANDUM OF UNDERSTANDING (1999), http://www.icann.org/en/nsi/amend1-jpamou-04nov99.htm [hereinafter MOU Amendment 1]. On September 4, 2000, ICANN announced that the U.S. Government agreed to extend ICANN's hold on the DNS for one year, or less "if ICANN and the U.S. Government agree that the work under the MOU has been completed." *ICANN and U.S. Government Agree to Extend Agreements*, ICANN (Sept. 4, 2000), http://www.icann.org/announcements/icann-pr04sep00.htm [hereinafter Announcement]; ICANN, AMENDMENT 2 TO ICANN/DOC MEMORANDUM OF UNDERSTANDING (2000), http://www.icann.org/en/general/amend2-jpamou-07sep00.htm (effective Sept. 7, 2000; generally terminates Sept. 30, 2001). This extension affected both the ICANN-DOC MOU of November 25, 1998, see MOU, *supra*, and ICANN's Cooperative Research and Development Agreement (ICANN, COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT BETWEEN ICANN AND US DEPARTMENT OF COMMERCE, http://www.icann.org/committees/dns-root/crada.htm (last updated Mar. 15, 2003) [hereinafter CRADA]). In addition, ICANN reported that the DOC extended ICANN's no-fee contract to run the Internet Assigned Number Authority ("IANA"): the IANA contract extension results from ICANN's acceptance of a new provision in the contract allowing the U.S. Government unilaterally to extend the period of performance by up to six months. Announcement, *supra*. That mostly set a pattern of repeated extensions, sometimes with modifications, of the three agreements. Thus, MOU Amendment 3 (ICANN, AMENDMENT 3 TO ICANN/DOC MEMORANDUM OF UNDERSTANDING (2001), http://www.icann.org/en/general/amend3-jpamou-25may01.htm [hereinafter MOU Amendment 3] (effective May 25, 2001)), followed by MOU Amendment 4 (ICANN, AMENDMENT 4 TO ICANN/DOC MEMORANDUM OF UNDERSTANDING (2001), http://www.icann.org/en/general/amend4-jpamou-24sep01.htm (effective Sept. 24, 2001)

later replaced by a Joint Project Agreement ("JPA"); (2) ICANN's Cooperative Research and Development Agreement ("CRADA") with the U.S. Government;[14] and (3) a contract between ICANN and the U.S. Government for performance of the so-called IANA (Internet Assigned Names and Numbers) function relating to the operational management of the root zone file, and the assignment of Internet Protocol ("IP") numbers and protocol numbers.[15]

Over the course of the past decade, each of these agreements was amended numerous times; the amendments gradually gave ICANN more authority and more independence. Full independence from the

(terms of Section VII extended until Sept. 30, 2002)), followed by MOU Amendment 5 (ICANN, AMENDMENT 5 TO ICANN/DOC MEMORANDUM OF UNDERSTANDING (2002), http://www.icann.org/en/general/amend5-jpamou-19sep02.htm (effective Sept. 19, 2002) (termination date of Sept. 30, 2003)), then MOU Amendment 6, (ICANN, AMENDMENT 6 TO ICANN/DOC MEMORANDUM OF UNDERSTANDING (2003), http://www.icann.org/en/general/amend6-jpamou-17sep03.htm (effective Sept. 17, 2003) (replaces § VII; termination date of Sept. 30, 2006)). The MOU was then replaced by the Joint Project Agreement. JOINT PROJECT AGREEMENT BETWEEN THE U.S. DEPARTMENT OF COMMERCE AND THE INTERNET CORPORATION FOR ASSIGNED NAMES AND NUMBERS (2006) (effective Sept. 29, 2006) (due to terminate Sept. 30, 2009) [hereinafter JPA]. The JPA ended with the Affirmation.

14. *See* CRADA, *supra* note 13, Amendment 1 to CRADA (ICANN, AMENDMENT 1 TO COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT (2000), http://www.icann.org/en/committees/dns-root/amend1-crada-07sep00.htm (extending CRADA for one year)), and Amendment 2 to CRADA (ICANN, AMENDMENT 2 TO COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT (2001), http://www.icann.org/en/committees/dns-root/amend2-crada-28sep01.htm (extending CRADA for nine months)); *see also* ICANN, PUBLIC SUMMARY OF REPORTS PROVIDED UNDER COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT BETWEEN ICANN AND US DEPARTMENT OF COMMERCE (Mar. 14, 2003), http://www.icann.org/en/general/crada-report-summary-14mar03.htm.
A CRADA is usually an agreement in which

> [t]he collaborating partner agrees to provide resources that may consist of funds, personnel, services, facilities, equipment or other resources needed to conduct a specific research or development effort while the Federal [government] agrees to provide similar resources but no direct funding to the partner. . . . The CRADA vehicle provides incentives that help speed the commercialization of Federally-developed technology[, making it an excellent technology transfer tool].

Patents, Licenses, and CRADA's, U.S. FISH AND WILDLIFE SERVICE, http://www.fws.gov/techtransfer/Level-2_folder/2_Patents.html (last visited Nov. 8, 2010).

15. Contract Between ICANN and the United States Government for Performance of the IANA Function (Mar. 17, 2003), http://www.icann.org/en/general/iana-contract-17mar03.htm [hereinafter IANA Contract] (includes three options to extend until Mar. 31, 2006); Amendment of Solicitation/Modification of Contract (Aug. 28, 2003), http://www.icann.org/en/general/iana-contract-02sep03.pdf; Letter from Joel L. Perlroth, U.S. Dept. of Commerce, to Paul Twomey, ICANN, Preliminary Notification of the Governments [sic] Intent to Extend the Term of Contract No. DG1335-03-SE-0336 (Aug. 1, 2003); U.S. Dept. of Commerce Award/Contract to ICANN, § C.4.1 (Aug. 11, 2006), http://www.icann.org/en/general/iana-contract-14aug06.pdf (includes four options to extend until Sept. 30, 2011). On IANA see *Introducing IANA*, IANA, http://www.iana.org/about (last visited Nov. 9, 2010).

U.S. was clearly ICANN's goal. But the U.S. retained leverage over ICANN for a number of reasons. Some were contractual and are discussed below. Others were political or institutional. Of these, likely the most important was the role played by Network Solutions, Inc. ("NSI," now VeriSign),[16] a private for-profit company that had made a fortune selling domain names, especially in the .com domain for which it served as registry and first monopoly, and then primary, and then *primus inter pares* registrar. The actual root zone file[17] (sometimes abbreviated as "the root") was and is housed on a computer run by NSI/VeriSign, not ICANN, seemingly a source of some heartburn in ICANN headquarters. ICANN had a long and sometimes adversarial relationship with NSI/VeriSign. At best, the relationship was certainly arms-length. This allowed the U.S. Government significant leverage: there was, at the end of the day, little chance that someone at NSI/VeriSign would take orders from ICANN if the U.S. Government told them not to.

The MOU was repeatedly amended during its life.[18] Ultimately in September 2006, the DOC and ICANN rebadged the MOU as a "Joint Project Agreement." By that point, ICANN's obligations to perform specific work items was much reduced.[19] In contrast, however, the legal relationship between ICANN and the U.S. was not that different from what it had been, and ICANN continued to press for full independence. While the U.S. Government may have had some concerns about its legal authority to cut ICANN free, the political ramifications of being accused of "losing" the Internet[20] likely loomed larger. Despite this, ICANN's

16. In 2000, NSI was acquired by VeriSign, Inc. *Company History*, NETWORK SOLUTIONS, http://about-networksolutions.com/corporate-history.php (last visited Nov. 9, 2010). In 2003, VeriSign sold NSI's registrar business, which resumed operations as NSI; VeriSign remained in the registry business. *Id. See also infra* note 77 (further details of NSI/VeriSign relationship).

17. A zone file is a plain text file that describes—and, if it is authoritative (i.e. relied on by most others), effectively defines—a layer of the hierarchical domain name structure of the DNS. The zone file contains mappings between names and IP addresses and other resources. The root zone file is the master definition for the DNS and contains the authoritative list of top-level domains and the information needed to find the authoritative domain name servers for each domain name. The procedure for adding any TLD to the Internet that most of us use is to add a single line to the root zone file containing the name of the new TLD, the address of the computer that has the authoritative information about that domain's registry, and a few items of technical data. For the full technical details, see Memorandum from P. Mockapetris to Internet Engineering Task Force Network Working Group, Domain Names – Implementation and Specification, § 5 (Nov. 1987), *available at* http://www.ietf.org/rfc/rfc1035.txt, and more generally, see Memorandum from P. Mockapetris to Internet Engineering Task Force Network Working Group, Domain Names – Concepts and Facilities (Nov. 1987), *available at* http://www.ietf.org/rfc/rfc1034.txt.

18. *See supra* note 13.

19. *Compare* JPA, *supra* note 13, § II, *with* MOU, *supra* note 13, § V.C.

20. For an example of the sort of criticism the DOC rightly feared, see Jeremy Rabkin & Jeffrey Eisenach, *The U.S. Abandons the Internet*, WALL ST. J., Oct. 3, 2009, at A13.

case for independence continued to gather steam.

ICANN's formal arguments rested in part on commitments in the White Paper that had called ICANN into being,[21] and on the various statements from U.S. Government officials since then.[22] In response to the objectives set by the U.S., ICANN established a lengthy paper record—sometimes even congruent with reality—designed to demonstrate that it was achieving each of the objectives set for it in the MOU. And indeed, even if the objectives had not all been met on the original short timetable, the checklist of objectives that the U.S. was willing to say had not been achieved kept shrinking in the MOU, amendment by amendment.

If, as explained below, the legal regime of the MOU and even the JPA retained features entrenching the U.S. Government's residual authority,[23] that same authority was under increasing assault in the international political realm. Non-U.S. governments and interest groups increasingly asked why it should be that the U.S. Government should have a uniquely controlling position in the DNS. Where once the bulk of Internet users had been in the U.S. and perhaps a handful of other countries, now the Internet was increasingly global. Influential voices in the European Union and Japan, soon joined by others from every continent and region, began to push for the U.S. to divest itself of its controlling position, or for ICANN's role to be turned over to a more international body.[24]

ICANN responded to the threat of the creation of a transnational competitor (or successor) with several initiatives. The initiatives were designed, on the one hand, to appeal to non-U.S. government and technical constituencies, while on the other hand to not anger the U.S. Government, on whose good will, or at least acquiescence, ICANN still depended if it were ever to achieve its goal of independence.

ICANN opened a branch office in Brussels, where the European

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21. The U.S. Government originally suggested that the transition to full private control of the DNS should be completed no later than September 30, 2000. White Paper, *supra* note 9, at 31,744. ("The U.S. Government would prefer that this transition be complete before the year 2000. To the extent that the new corporation is established and operationally stable, September 30, 2000 is intended to be, and remains, an 'outside' date.").

22. *See* Froomkin, *supra* note 4, at 31 n.43 (collecting contradictory statements by U.S. Government officials).

23. *See infra* Part I.B.2 (describing ways in which the U.S. retained limited ability to exercise authority over the root).

24. *E.g.*, *Changes Loom for ICANN*, TERRA DAILY (Sept. 27, 2009), http://www.terradaily.com/reports/Changes_loom_for_ICANN_999.html (reporting that European Commissioner Viviane Reding stated that Europeans expect to see ICANN become a "fully independent organization, accountable to the global Internet community" because "it is not defendable that the government department of only one country has oversight of an internet function which is used by hundreds of millions of people in countries all over the world[.]").

Commission has its headquarters.[25] ICANN revamped its country-code TLD ("ccTLD") operations to remove some of the practices that had most irritated foreign governments.[26] It also supported every foreign government that sought to take over its own domestic ccTLD, whether or not this move was opposed by the incumbent—a policy likely at odds with earlier Internet norms.[27]

More importantly, ICANN gradually expanded the role of its Government Advisory Committee. ICANN's GAC began in 1998 as an advisory organ consisting of one representative of each participating national government, and selected international governmental organizations.[28] The ICANN Board, when considering decisions that "substantially affect the operation of the Internet or third parties," was to provide notice to the GAC for comment,[29] and to consider the GAC's comments before making a final decision.[30] From the start, membership was open to all national governments and also to international organizations, such as the World Intellectual Property Organization ("WIPO"), when invited by the GAC or the Board.[31]

In 2002, new ICANN Bylaws expanded the GAC's powers considerably: in the event of a conflict between a GAC "comment" and the Board's decision, the Bylaws mandated negotiation towards mutual resolution.[32] However, the Board maintained the power to take action notwithstanding conflicting advice, so long as its reasoning was included in the final decision.[33] The 2002 Bylaws further gave the GAC unilateral power to directly recommend Board action.[34] Furthermore, comments

25. ICANN opened its Brussels office in 2003. *See Adopted Resolutions from ICANN Board Meeting*, ICANN (Nov. 22, 2006), http://www.icann.org/en/minutes/resolutions-22nov06.htm. It also opened an office in Sydney in 2006. *See id.*

26. *See*, *e.g.*, ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, DIRECTORATE FOR SCIENCE, TECHNOLOGY, AND INDUSTRY, WORKING PARTY ON TELECOMMUNICATION AND INFORMATION SERVICES POLICIES, EVOLUTION IN THE MANAGEMENT OF COUNTRY CODE TOP-LEVEL DOMAIN NAMES (CCTLDS) (2006).

27. *See* Peter K. Yu, *The Neverending ccTLD Story*, *in* ADDRESSING THE WORLD: NATIONAL IDENTITY AND INTERNET COUNTRY CODE DOMAINS 1, 3-4 (Erica S. Wass ed., 2003); A. Michael Froomkin, *Form and Substance in Cyberspace*, 6 J. SMALL & EMERGING BUS. L. 93, 106-08 (2002); A. Michael Froomkin, *How ICANN Policy Is Made (II)*, ICANNWATCH (Sept. 5, 2001, 2:29 AM), http://www.icannwatch.org/article.pl?sid=01/09/05/072945&mode=thread.

28. ICANN, BYLAWS art. VII § 3(a) (Nov. 6, 1998), http://www.icann.org/en/general/archive-bylaws/bylaws-06nov98.htm.

29. *Id.* art. VII § 3(a), art. III § 3(b).

30. *Id.* art. VII § 3(a).

31. ICANN, BYLAWS art. VII § 3(a) (May 27, 1999), http://www.icann.org/en/general/archive-bylaws/bylaws-27may99.htm.

32. ICANN, BYLAWS art. XI §§ 2(1)(i)-(j) (Dec. 15, 2002), http://www.icann.org/en/general/archive-bylaws/bylaws-15dec02.htm.

33. *Id.* art. XI § 2(1)(k).

34. *Id.* art. XI § 2(1)(i).

could now be solicited by the GAC from external sources on recommendation by the GAC or decision by the Board.[35] The GAC was given further representation in ICANN governance through participation in Board meetings,[36] the Generic Names Supporting Organization policy recommendations,[37] and the country-code Names Supporting Organization.[38] Its presence in management was solidified through its exemption from forced removal procedures.[39]

In enhancing the GAC's power, ICANN achieved a trifecta. It made friends in foreign governments and created constituencies in the ministries that sent delegates to ICANN GAC meetings. Often these ministries were commerce-and-trade-based, and thus internal competitors to the communication ministries that attended International Telecommunications Union ("ITU") plenaries. Having a different ministry invested in ICANN created a constituency for the proposition that even if ICANN was not perfect, an ICANN with a strong GAC was a good deal. Even without this piece of internal politics, many non-U.S. governments concluded that an independent ICANN was better than the status quo in which the U.S. had a dominant role.[40] Those governments in turn became more likely to pressure the U.S. to make good on its White Paper promise to make ICANN independent despite the U.S. Government's subsequent vacillation and doubt.[41]

Amidst all this, ICANN also began some projects designed to increase its power and independence. For example, from an early stage ICANN floated a trial balloon that it, not NSI/VeriSign, should control the root servers directly.[42] This suggestion met with more than a little opposition, and was eventually dropped—only to resurface.[43] Meanwhile,

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35. *Id.* art. XI-A § 1(3)(a).

36. *Id.* art. VI §§ 9(1)(a), 9(5).

37. *Id.* art. X § 3(1).

38. ICANN, BYLAWS art. IX § 3(2), annex B § 5(a) (June 26, 2003), http://www.icann.org/en/general/archive-bylaws/bylaws-26jun03.htm.

39. ICANN, *supra* note 32, art. VI § 11(2).

40. *Cf.* Wolfgang Kleinwoechter, *From Self-Governance to Public-Private Partnership: The Changing Role of Governments in the Management of the Internet's Core Resources*, 36 LOY. L.A. L. REV. 1103, 1110-11 (2003).

41. Some of the U.S.'s contradictory statements are summarized in Froomkin, *supra* note 4, at 31 n.43.

42. *See*, *e.g.*, M. STUART LYNN, PRESIDENT'S REPORT: ICANN – THE CASE FOR REFORM (2002), http://www.icann.org/en/general/lynn-reform-proposal-24feb02.htm. *See also* A. Michael Froomkin, *IP: Where Goes ICANN – the Second of Two Notes*, INTERESTING-PEOPLE (Feb. 27, 2002, 09:00), http://www.interesting-people.org/archives/interesting-people/200202/msg00259.html; David Post, *ICANN ver. 2.0 and "Mission Creep,"* ICANNWATCH (Feb. 28, 2002, 01:45 AM), http://www.icannwatch.org/article.pl?sid=02/02/28/064529&mode=thread; Jon Weinberg, *Busy with the Root*, ICANNWATCH (May 10, 2001, 3:10 AM), http://www.icannwatch.org/article.pl?sid=01/05/10/081012&mode=thread.

43. *See infra* note 78 (describing ICANN suggestion that it should have sole control over

ICANN started to explore whether it could become a true international organization like the ITU, the Universal Postal Union, or WIPO. From the outside it is difficult to gauge just how serious ICANN was about transmogrifying into a Geneva-based multinational organization, or whether this was just a bargaining chip to persuade the U.S. to reduce its ties. In 2006, ICANN's President's Strategy Committee took up the question of whether ICANN's "ability to scale internationally" was being harmed by "its legal personality being based in a specific jurisdiction."[44] In its 2007 Final Report, that same committee "encourage[d] the ICANN Board to explore with the U.S. Government, other governments, and the ICANN community, whether there are advantages and appropriate mechanisms for moving ICANN's legal identity to that of a private international organization based in the U.S."[45] And it further "encourage[d] the Board to consider . . . the benefits of the international private organization model and its related potential immunities to limit liabilities or instabilities."[46] From ICANN's viewpoint, the prospect of international status certainly seemed to offer everything that ICANN's critics feared ICANN most wanted: immunity from suit in the U.S., international stature, a lack of outside supervision and control, no need to have a 'membership' or file California and U.S. tax returns,[47] not to mention all the international travel a body could stand. On the other hand, the chances of achieving such stature without an international agreement, especially without U.S. blessing, were slim at best. Although non-U.S. governments were not happy with the status quo, nor with the U.S.'s very slow approach to changing it, there was never any sign that they were prepared to support a move by ICANN to abandon its U.S. base in the face of opposition from the DOC.

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the keys used to sign the root).

44. *President's Strategy Committee Consultation with the ICANN Community Improving the Inherent Strength of the Multi-stakeholder Model*, ICANN, http://www.icann.org/en/announcements/psc-consultation-en.htm (last modified Aug. 13, 2010).

45. ICANN, FINAL PRESIDENT'S STRATEGY COMMITTEE REPORT 3 (2007).

46. *Id.* at 5.

47. The President's Strategy Committee commissioned Ambassador Hans Corell, the former Under-Secretary-General for Legal Affairs and a former Legal Counsel of the United Nations, to produce a report on the international status option. *See ICANN Meetings in Lisbon Portugal: Transcript – President's Strategy Committee Workshop*, ICANN (Mar. 28, 2007), http://www.icann.org/en/meetings/lisbon/transcript-psc-28mar07.htm. Ambassador Corell's report is published at Hans Corell, *Educational Material to Assist ICANN in Deciding What Status the Corporation Should Aim for as a Private International Entity in Its Host Country*, ICANN, http://www.icann.org/en/psc/corell-24aug06.html (last modified Aug. 13, 2010). Ambassador Corell's report emphasized a proposed Swiss law granting special privileges and immunities to international organizations, including "international quasi governmental organisation[s]" and "other international organisms," having Switzerland as their host State. *Id.* § 7.

This quick survey of a very tangled set of relationships sets the scene for the Affirmation of Commitments.

B. Key Aspects of the Affirmation

"U.S. Cedes ICANN Control to the World" read the headline at Internetnews.com.[48] Both ICANN and the DOC trumpeted the Affirmation of Commitments as a major milestone. The DOC's official statement said,

> Today's announcement bolsters the long-term viability of the Internet as a force for innovation, economic growth, and freedom of expression . . . . This framework puts the public interest front and center, and it establishes processes for stakeholders around the world to review ICANN's performance. The *Affirmation of Commitments* also reinforces a long-standing relationship between ICANN and the Department of Commerce. The Department looks forward to playing an active role along with other stakeholders in ensuring that ICANN is successful, accountable, and transparent.[49]

> The *Affirmation* is consistent with public comments submitted to NTIA earlier this year that reflected strong support for the model of multi-stakeholder, private-sector-led coordination of the DNS that ICANN represents, but also expressed continuing concerns about ICANN's transparency and accountability in decision-making.[50]

Yet, from a legal standpoint, the Affirmation of Commitments is, on the whole, quite vacuous. Indeed, the Affirmation's greatest significance may lie in what it is not.

1. What's There

The most important aspect of the Affirmation appears in its first paragraph: the Affirmation recognizes the lapsing of the JPA—and unlike the many amendments to the MOU that preceded it, this time ICANN and the DOC were not extending the agreement. Instead, in

48. Sean Michael Kerner, *U.S. Cedes ICANN Control to the World*, INTERNETNEWS.COM (Sept. 30, 2009), http://www.internetnews.com/infra/article.php/3841671/US+Cedes+ICANN+Control+to+the+World.htm.

49. Press Release, Nat'l Telecomms. and Info. Admin., Commerce's NTIA and ICANN Establish a Long-Lasting Framework for the Technical Coordination of the Internet's Domain Name and Addressing System (Sept. 30, 2009), http://www.ntia.doc.gov/press/2009/ICANN_Affirmation_090930.html.

50. *Id.* (emphasis in original).

the subsequent sections ICANN and the DOC recited some commitments. The parties described those commitments in broad and ringing terms:

> This document affirms key commitments by DOC and ICANN, including commitments to: (a) ensure that decisions made related to the global technical coordination of the DNS are made in the public interest and are accountable and transparent; (b) preserve the security, stability and resiliency of the DNS; (c) promote competition, consumer trust, and consumer choice in the DNS marketplace; and (d) facilitate international participation in DNS technical coordination.[51]

Sounds great. But, in fact, the DOC didn't really promise anything enforceable, and neither, in the main, did ICANN. Indeed, from a strictly legal viewpoint there is a case to be made that whatever the Affirmation is, it is not a contract as there is no exchange of consideration. Rather, it is a repetition of things the parties had, in the main, previously said they were already doing. Arguably, the DOC's allowing the JPA to lapse could be seen as a form of consideration for ICANN's binding itself to its promises, but since the JPA would have lapsed without both parties extending it, and it's unclear where the DOC gets the statutory authority to enter into a contract such as the Affirmation, this seems odd consideration at best.

a. DOC's Promises

The Affirmation contains no binding promises by the U.S. Government. Given the history of the agreements it replaced, which consisted of commitments almost solely by ICANN, the absence of explicit statutory authority for the DOC's management of ICANN and of the root, and the equal nonexistence of any formal rulemaking or adjudicatory process, it is hardly surprising that the U.S. Government was not in a position to promise much.

Instead, the DOC "affirm[ed] its commitment" to the Internet equivalent of Motherhood, "a multi-stakeholder, private sector led, bottom-up policy development model for DNS technical coordination that acts for the benefit of global Internet users."[52] The DOC also affirmed its commitment to the GAC and (in principle, subject to more on the details) to multinational character sets for internationalized TLDs.[53]

51. AFFIRMATION, *supra* note 1, ¶ 3.
52. *Id.* ¶ 4.
53. *Id.* ¶¶ 4-6.

And that's it. The rest of the Affirmation consists of statements about what ICANN will do.

b. ICANN's Promises

ICANN makes some sweeping promises in the Affirmation. ICANN promises:

> to adhere to transparent and accountable budgeting processes, fact-based policy development, cross-community deliberations, and responsive consultation procedures that provide detailed explanations of the basis for decisions, including how comments have influenced the development of policy consideration[;] . . . to provide a thorough and reasoned explanation of decisions taken, the rationale thereof and the sources of data and information on which ICANN relied[;][54] . . . [to] remain a not for profit corporation, headquartered in the United States of America with offices around the world to meet the needs of a global community; . . . to operate as a multi-stakeholder, private sector led organization with input from the public, for whose benefit ICANN shall in all events act[;][55] . . . to maintain and improve robust mechanisms for public input, accountability, and transparency so as to ensure that the outcomes of its decision-making will reflect the public interest and be accountable to all stakeholders . . . .[56]

These are significant-sounding commitments about almost every aspect of ICANN's operations. Fully realized, they would likely defang all but the most overly zealous or nationalistic of ICANN's critics. But any jaundiced veteran of the DNS wars will immediately notice two things about this list: almost nothing on this list is new, and none of it is enforceable.

All but one of these commitments could have been lifted from any of a number of previous similar documents that ICANN has produced. With the exception of its explicit promise to stay headquartered in the USA—which is significant[57]—ICANN not only has made these or similar commitments many times in the past,[58] it has also congratulated

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54. *Id.* ¶ 7.

55. *Id.* ¶ 8.

56. *Id.* ¶ 9.1.

57. *See infra* text accompanying notes 120-20.

58. *See, e.g.*, *Accountability and Transparency Frameworks and Principles: Accountability in the Public Sphere*, ICANN (Feb. 15, 2008), http://www.icann.org/en/accountability/frameworks-principles/public-sphere.htm (explaining ICANN's role in performing a public trust function); *Accountability and Transparency Frameworks and Principles: Legal and Corporate Accountability*, ICANN (Feb. 15, 2008), http://www.icann.org/en/accountability/frameworks-principles/legal-corporate.htm (discussing the legal and corporate accountability ICANN has under the legal system and its Bylaws); *Accountability and Transparency Frameworks and Principles: Accountability to the*

itself for making good on these or similar objectives.[59] Anyone concerned (with reason)[60] that perhaps ICANN is not as open and transparent as it has consistently claimed will find little comfort in a reiteration of those promises—although there is always hope when management changes.[61]

Many of ICANN's commitments in the Affirmation turn out to be less than they might seem. For example, the promise "to maintain and improve robust mechanisms for public input, accountability, and transparency so as to ensure that the outcomes of its decision-making will reflect the public interest and be accountable to all stakeholders"[62] turns out to have four sub-parts describing implementation. Each of these sub-parts commits ICANN to actions with words like "assessing and improving," "assessing . . . and making recommendations," "continually assessing and improving," and "continually assessing."[63] As if that were not enough, ICANN commits to "organize a review of its execution of the above commitments no less frequently than every three years"[64] to make sure that all the assessing and improving is proceeding. ICANN also undertook to issue "an annual report that sets out ICANN's progress against ICANN's bylaws, responsibilities, and strategic and operating plans[,]"[65] and to report on an ongoing basis regarding "the positive and negative effects of its decisions on the public, including any financial impact on the public, and the positive or negative impact (if any) on the systemic security, stability and resiliency of the DNS."[66] This example is drawn from paragraph 9.1 of the Affirmation, but the commitments in paragraphs 9.2 ("Preserving security, stability

Participating Community, ICANN (Feb. 15, 2008), http://icann.org/en/accountability/frameworks-principles/community.htm (asserting ICANN's accountability to the public at large); *see also* ICANN, ACCOUNTABILITY AND TRANSPARENCY FRAMEWORKS AND PRINCIPLES (2008) (discussing how ICANN's various types of accountability support its operating model); ONE WORLD TRUST, INDEPENDENT REVIEW OF ICANN'S ACCOUNTABILITY AND TRANSPARENCY – STRUCTURES AND PRACTICES (2007) (evaluating ICANN's standards of accountability and transparency against other international organizations).

59. *E.g.*, KIERAN MCCARTHY, LEAVING REPORT OF GENERAL MANAGER OF PUBLIC PARTICIPATION (2009).

60. To pick just the most obvious example, most ICANN Board meetings are held in secret, are not recorded, and the public is given corporate-style summaries of its actions some days later. When the ICANN Board has a public meeting, it first meets in secret in advance to discuss the issues that will come up in public. *Cf.* John Palfrey, *The End of the Experiment: How ICANN's Foray Into Global Internet Democracy Failed*, 17 HARV. J.L. & TECH 409, 437-47 (2004).

61. Rod Beckstrom took over as ICANN President and CEO on July 1, 2009. *See, e.g., Rod Beckstrom, President and CEO,* ICANN, http://www.icann.org/en/biog/beckstrom.htm (last modified Aug. 13, 2010).

62. AFFIRMATION, *supra* note 1, ¶ 9.1.

63. *Id.*

64. *Id.*

65. *Id.* ¶ 7.

66. *Id.* ¶ 4.

and resiliency") and 9.3 ("Promoting competition, consumer trust, and consumer choice") are little different.[67]

The means by which the triennial assessment teams will be constituted does say something about where ICANN sees its future. The teams will be made up of ex officio members and "volunteer community members" selected by ICANN's Board Chair and the Chair of the GAC.[68] It is possible that the triennial assessments may matter, because delivery of the reports will provide an occasion for ICANN to agenda their recommendations. Indeed, in the Affirmation, ICANN promises that "[t]he Board will take action within six months of receipt of the recommendations."[69] Of course that's carefully vague as to what sort of action the Board might take; it is certainly not a promise to agree with the teams or implement their recommendations.

One thing is clear: in contrast with the MOU and JPS regime, no more will ICANN's reports be directed to DOC.[70] Whatever its practical import, this is high symbolism, marred only a little by the guarantee that the DOC will have an ex officio seat among the members of one of the four report-writing teams.[71]

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67. A few differences between these sections are noted *infra* note 71.

68. On the GAC, see *supra* text accompanying notes 28-41. The current chair is Mr. Janis Karklins of Latvia. *Elected Officers*, GAC, http://gac.icann.org/elected-officers (last visited Nov. 6, 2010). Former chairs were Sharil Tarmizi of Malaysia who served from 2002-2006 and Paul Twomey of Australia, 1999-2002. *Id.* Following his stint at the GAC, Mr. Twomey served as ICANN President and CEO from March 2003 to June 2009. *Paul Twomey*, ICANN, http://www.icann.org/en/biog/twomey.htm (last modified Aug. 13, 2010).

69. AFFIRMATION, *supra* note 1, ¶¶ 9.1–9.3.

70. ICANN President and CEO Beckstrom seemed to see this as particularly significant:

> But there's no separate or unique or separate reporting to the United States government. All the reporting is to the world; that's the real change. Under the JPA the reporting was just to the U.S. government, and some of it was handled publicly, and now all the reporting is global.

ICANN CEO Talks About the New Affirmation of Commitments, ICANN (Sept. 30, 2009), http://www.icann.org/en/announcements/announcement-30sep09-en.htm.

71. This provision is unique to ¶ 9.1:

> [T]he review team will be constituted and published for public comment, and will include the following (or their designated nominees): the Chair of the GAC, the Chair of the Board of ICANN, the Assistant Secretary for Communications and Information of the DOC, representatives of the relevant ICANN Advisory Committees and Supporting Organizations and independent experts. Composition of the review team will be agreed jointly by the Chair of the GAC (in consultation with GAC members) and the Chair of the Board of ICANN.

AFFIRMATION, *supra* note 1, ¶ 9.1. In contrast, in ¶ 9.2 the composition of the team is broader:

> The review will be performed by volunteer community members and the review team will be constituted and published for public comment, and will include the following (or their designated nominees): the Chair of the GAC, the CEO of ICANN, representatives of the relevant Advisory Committees and Supporting Organizations, and independent experts. Composition of the review team will be agreed jointly by the Chair of the GAC (in consultation with GAC members) and

Symbolism may indeed be the strongest affirmative characteristic of the Affirmation: nothing in the Affirmation, nor anything else ICANN has said on the subject, suggests that any of these promises are enforceable by the U.S. Government, much less by an interested third party. The Affirmation can be terminated by either party on 120 days notice.[72] But since the MOU and the JPA are no more, termination is an empty threat—there's nothing to revert to if the Affirmation bites the dust. As Rod Beckstrom noted, "The Affirmation is effectively a perpetual agreement."[73]

2. What's Not There

The most interesting aspects of the Affirmation are not what it says, but rather the parts of ICANN's relationship with the U.S. that are not addressed explicitly. Some remain unchanged; for others the change in political relations symbolized by the Affirmation may make a difference. And, in one case, the lapse of the MOU/JPA regime creates a legal opening for ICANN to further liberate itself from any threat the U.S. Government might make to displace it.

Final authority over changes to the root zone file. The root zone file is a simple text document that, because it is copied and relied on by others, defines which TLDs are visible to most users on the Internet and defines which registry controls registrations in each of those domains.[74] Prior to the Affirmation, the U.S. Government, not ICANN, had final authority over changes to the key root zone file. The physical root zone file resides on a computer controlled by VeriSign (formerly NSI), a U.S. Government contractor.[75] The contractual relationship between the U.S. and NSI/VeriSign was itself fraught with conflict, but while the U.S. Government generally prodded NSI/VeriSign to cooperate with and even obey ICANN, there was one key exception. As spelled out in Amendment 11 to the U.S.–NSI contract, NSI (as it then was called)

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the CEO of ICANN.

Id. ¶ 9.2. Likewise, in ¶ 9.3:

> The reviews will be performed by volunteer community members and the review team will be constituted and published for public comment, and will include the following (or their designated nominees): the Chair of the GAC, the CEO of ICANN, representatives of the relevant Advisory Committees and Supporting Organizations, and independent experts. Composition of the review team will be agreed jointly by the Chair of the GAC (in consultation with GAC members) and the CEO of ICANN.

Id. ¶ 9.3.

72. *Id.* ¶ 11.

73. *ICANN CEO Talks About the New Affirmation of Commitments*, *supra* note 70.

74. *See* Froomkin, *supra* note 4, at 43-44.

75. As noted above, at times the contractor has been known as VeriSign and at times as Network Solutions, Inc. (NSI). *See supra* text accompanying note 16.

could not change the root file on ICANN's instructions without a counter-signature from a federal official:

> While NSI continues to operate the primary root server, it shall request written direction from an authorized USG official before making or rejecting any modifications, additions or deletions to the root zone file. Such direction will be provided within ten (10) working days and it may instruct NSI to process any such changes directed by [ICANN] when submitted to NSI in conformity with written procedures established by [ICANN] and recognized by the USG.[76]

In other words, before the Affirmation, if ICANN wanted to add, change, or remove a TLD, it needed the DOC's permission, or at least acquiescence. Nothing in the Affirmation changes that,[77] and it remains true unless the U.S. amends its contract with VeriSign, or if the technical means by which the root zone file is authenticated change in a way that makes ICANN the only party controlling the cryptographic certification process.[78]

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76. Special Award Conditions, NCR-9218742, Amendment No. 11, *available at* http://www.ntia.doc.gov/ntiahome/domainname/proposals/docnsi100698.htm (Oct. 7, 1998) [hereinafter Amendment 11]. As ICANN had not formally been recognized by the DOC at the time the DOC entered into this agreement with NSI, ICANN was identified only as "NewCo" in Amendment 11.

77. In 2000, NSI was acquired by VeriSign, Inc. *Company History*, NETWORK SOLUTIONS, http://about-networksolutions.com/corporate-history.php (last visited Nov. 6, 2010). The Cooperative Agreement remained in effect between the DOC and VeriSign. ICANN, AMENDMENT 24 TO COOPERATIVE AGREEMENT BETWEEN NSI AND U.S. GOVERNMENT (2001), http://www.icann.org/en/nsi/coopagmt-amend24-25may01.htm (amending Section I(A)(4) of Amendment 19) ("'NSI' refers to Network Solutions, Inc., a wholly owned subsidiary of VeriSign, Inc., and its successors and assigns. From the date of execution of this amendment, the Cooperative Agreement will refer to 'VeriSign' as the non-government party to this agreement."). No subsequent amendments have expressly changed the Amendment 11 provision. The root responsibilities of Amendment 11 have been referred to in other subsequent contracts, which is evidence of their continued validity at least as late as August, 2006. *See*, *e.g.*, U.S. Dept. of Commerce Award/Contract to ICANN, *supra* note 15, § C.4.1 ("This purchase order, in itself, does not authorize modifications, additions, or deletions to the root zone file or associated information. (This purchase order does not alter root system responsibilities as set forth in Amendment 11 of the Cooperative Agreement NCR-9218742 between the DOC and VeriSign, Inc.)").

78. Subsequent to the Silicon Flatirons Conference, ICANN altered the procedure for authenticating—and thus, perforce, for changing—the content of the root. ICANN generates, and uses, the Key Signing Key ("KSK"), while VeriSign generates/uses the Zone Signing Key ("ZSK"). *See* JOE ABLEY ET AL., ROOT DNSSEC ROOT DESIGN TEAM, DNSSEC ROOT ZONE HIGH LEVEL TECHNICAL ARCHITECTURE 2 Fig. 1 (2010). ICANN originally proposed to manage the whole DNSSEC procedure for the root, including editing, signing, and publishing the zone file. *See* ICANN, ICANN PROPOSAL TO DNSSEC-SIGN THE ROOT ZONE (2008). VeriSign objected to this plan. *See* Brenden Kuerbis, *ICANN's DNSSEC Root Signing Proposal D.O.A.?*, INTERNET GOVERNANCE PROJECT BLOG (Oct. 3, 2008, 1:57 PM), http://blog.internetgovernance.org/blog/_archives/2008/10/3/3899192.html;

U.S. Government power to make a unilateral change in the root. A re-delegation of a TLD is a change in control (from one registry to another) of the master file that defines who is registered in it. Re-delegations are by no means unheard of among the ccTLDs. Since the registry that controls a TLD's master database has in effect total power over who can register in it, ICANN has a moderately involved process, run through its IANA subsidiary, for determining whether to accept a re-delegation application.[79] The process for re-delegating a ccTLD involves a period of consultation with local stakeholders, although oddly the process is not very public. Even so, it is far from instantaneous.

In 2001, the U.S. Government decided to put the Neustar Corporation in charge of the .us ccTLD. The change was not especially controversial by ICANN standards, but it happened in a very rushed manner and bypassed the usual IANA procedures,[80] thus demonstrating the U.S. Government's unilateral power over the root.[81] Nothing has formally changed as a result of the Affirmation that would alter the U.S. Government's ability to order or persuade VeriSign to insert a change into the root without a recommendation from ICANN (acting through IANA). On the other hand, the U.S. Government's participation in the Affirmation, and especially its statements about ICANN's independence,[82] may be seen as a promise not to take any such action.[83] Plus, the one example of U.S. unilateralism in this arena relates to the .us TLD. As many governments see management of the ccTLD bearing their country code as something that is or should be primarily an internal

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VERISIGN, INC., ROOT ZONE SIGNING PROPOSAL (2008). The NTIA ultimately chose not to give ICANN the sole power to define the root. *See* NAT'L TELECOMMS. & INFO. ADMIN., TESTING AND IMPLEMENTATION REQUIREMENTS FOR THE INITIAL DEPLOYMENT OF DNSSEC IN THE AUTHORITATIVE ROOT ZONE (2009). The critical point for current purposes is that ICANN cannot act unilaterally; it must still get cooperation from an outside party—here, VeriSign—to make changes in the root.

79. *See generally Understanding the ccTLD Delegation and Redelegation Procedure*, IANA (Oct. 1, 2007), http://www.iana.org/domains/root/delegation-guide, for the current procedures.

80. *See Redelegation of .us Country-Code Top-Level Domain*, ICANN (Nov. 19, 2001), http://www.icann.org/en/announcements/announcement-19nov01.htm (admitting that "redelegation occurred before the completion of the normal IANA requirements"). Interestingly, that announcement also promised that "[a] full IANA report will be posted as soon as it is complete." *Id.* But, as of October 2010, I have not been able to find the report and am told it was never released. Another peculiarity is that the ITU's account of the transition, based on information provided by the U.S. Government, completely glosses over the issue. *See* INT'L TELECOMM. UNION, .US RE-DELEGATION CASE STUDY (2003), *available at* http://www.itu.int/itudoc/itu-t/workshop/cctld/cctld037_ww9.doc.

81. *See generally* Marc Schneiders & Simon Higgs, Root Fix for the .US Top Level Domain (Mar. 2002) (working paper), *available at* http://tools.ietf.org/id/draft-higgs-schneiders-root-fix-us-00.txt.

82. *See supra* text accompanying note 50.

83. *Cf. infra* Part II.D (discussing national security considerations relating to control of the root).

matter,[84] the precedent set may be of little value were the U.S. to try similar tactics with any other non-proprietary TLD in the future.

The U.S. Government's reversionary interest in ICANN's contracts with key third parties. The MOU specified that the U.S. Government kept the right to replace ICANN, and if it did, NSI/VeriSign, the other registrars, and the other registries—the people who run the mechanics of the DNS—must terminate their relationships with ICANN, thus allowing them to substitute the Government's new choice.[85] In furtherance of this duty, ICANN's early standard contract with, for example, registries, terminated if ever the DOC "withdraws its recognition of ICANN."[86] There is, however, no evidence that the Government ever contemplated using this nuclear option or even threatened to do so. These contractual terms between ICANN and others remain in effect after the Affirmation, although there remains no way other than perhaps terminating the Affirmation itself for the U.S. to "withdraw its recognition of ICANN." Furthermore, there appears to be no reason why ICANN could not, if it chose, amend its standard form agreement to remove the clause, and gradually amend the agreements in place as they come up for renewal. The lapse of the U.S. Government's pre-existing ability to credibly threaten to replace ICANN and force it to assign its contracts with the registries and registrars may be the most significant legal consequence of the Affirmation.

The IANA Agreement is a separate agreement from the MOU. Many of ICANN's most important powers—such as the ability to re-delegate domains and its control over IP number block allocations—derived not from the MOU but from a separate, most peculiar, purchase order by which ICANN contracted to provide the "IANA function" to the U.S. Government for an annual fee of $0.[87] The IANA agreement is unaffected by the Affirmation. The current version of the IANA

84. *Cf.* A. Michael Froomkin, *When We Say US™, We Mean It!*, 41 HOUS. L. REV. 839 (2004).

85. *See* MOU Amendment 3, *supra* note 13, § IV ("If the DOC withdraws its recognition of ICANN or any successor entity by terminating this MOU, ICANN agrees that it will assign to the DOC any rights that ICANN has in all existing contracts with the registries and registrars, including any data escrow agreement(s) between VeriSign and ICANN with respect to the .com, .net, and .org registries."). *See also* MOU, *supra* note 13, § VII; MOU Amendment 1, *supra* note 13, § 3.

86. ICANN, ICANN-NSI REGISTRY AGREEMENT ¶ 24 (1999), http://www.icann.org/en/nsi/nsi-registry-agreement-04nov99.htm ("In the event that, prior to the expiration or termination of this Agreement under Section 14 or 16(B), the United States Department of Commerce withdraws its recognition of ICANN as NewCo under the Statement of Policy pursuant to the procedures set forth in Section 5 of Amendment 1 (dated November 10, 1999) to the Memorandum of Understanding between ICANN and the Department of Commerce, this Agreement shall terminate.").

87. *See* Froomkin, *supra* note 4, at 86.

agreement is due to expire in 2011,[88] and there has been no word on whether it will be extended, amended, or allowed to die a quiet death. So long as the agreement remains in force, however, the U.S. retains the ability to threaten, albeit less credibly than before, to shift those powers to a different organization if ever ICANN does something so weird or dangerous that the U.S. felt moved to try to wrest control from it.[89]

C. What the Affirmation Tells Us About ICANN's Legal Status and About Its Future

The Affirmation suggests that one of the many competing explanations for ICANN's status is in ascendency. In *Wrong Turn in Cyberspace* I described twin narratives put forth by ICANN and the DOC. One was the "standard-setting story"[90] in which ICANN did not make policy or political decisions, but only proclaimed standards set by a bottom-up consensus process and then implemented them.[91] Another was the "private party story"—ICANN described as a not-for-profit California corporation genuinely created spontaneously without involvement of Ira Magaziner or other federal officials.[92] This private body, it was said, made its decisions independently, without overt or tacit instructions from the U.S. Government. A large number of ICANN's actions might have been designed to fulfill the objectives set in the White Paper—a mere government policy statement, and thus one with no legal force—but that was because those were good policies and ICANN believed in them. I contrasted these stories with competing critical

88. U.S. Dept. of Commerce Award/Contract to ICANN, *supra* note 15.

89. What exactly would happen if the U.S. were to attempt to assign the IANA function to a new body is a slightly complicated question. On the one hand, if the U.S. had the authority to enter into the IANA agreement with ICANN, then it ought logically to have the same authority to enter into a successor agreement with some other party. On the other hand, IANA's most important functions depend on the consent and cooperation of many third parties who all agree to treat IANA's decisions as authoritative. Thus, with regard to the IP numbering function for example, any new IANA's ability to do anything would depend in large part on being recognized by the five Regional Internet Registries ("RIRs"). *See infra* text accompanying note 139.

90. Froomkin, *supra* note 4, at 35.

91. The counter-narrative here is that the focus on "bottom-up" process is often a sham. *E.g.*,

> Although ICANN likes to posit itself as an organisation rooted in communities, where policy is developed from the bottom up, this wonderfully democratic discourse stands in rather ugly contrast to the quite questionable practices that are all too frequently reported from the organisation (the rather stepsisterly treatment meted out to noncommercial users in ICANN in recent times, for example, immediately comes to mind.)

Anja Kovacs, *The ICANN-US DOC 'Affirmation of Commitments' - A Step Forward?*, NONCOMMERCIAL USERS CONSTITUENCY (NCUC) (Oct. 7, 2009, 4:43 AM), http://ncdnhc.org/profiles/blogs/the-icannus-doc-affirmation-of.

92. Froomkin, *supra* note 4, at 34.

narratives in which ICANN was political and in which the U.S. Government's ability to pull the plug on ICANN, combined with signs that the DOC might be quietly advising ICANN on policy matters, made ICANN a candidate for state actor status.[93]

The Affirmation explicitly states that ICANN is a private body.[94] Indeed, whatever the case a decade ago, the lapse of the MOU–JPA certainly strengthens the case for the private party story today as regards U.S. law, although ironically the reverse is partly true in the international arena. ICANN achieved this domestic de-governmentalization despite the fraying of the "standard setting story"—even ICANN's counsel admitted long ago that ICANN does policy.[95] ICANN's growing independence from the U.S.—even if it is not yet complete—weakens, I think fatally, the case for labeling ICANN a state actor under U.S. law in the future.

To date, criticisms of the Affirmation have tended to focus on accountability concerns.[96] Some argue that the lack of defined criteria and standards of measurement for ICANN's performance are likely to diminish the effectiveness of the review panels.[97] The power to select the review panels is concentrated in the hands of insiders—ICANN's CEO, the leader of the body being reviewed, chief among them. This led the Coalition Against Domain Name Abuse to criticize the Affirmation as making ICANN "a regulator that has been captured from within."[98] Others note that the review panels' recommendations are not binding,

93. *See id.*; *see also* Jennifer Arenett-Mitchell, *State Action Debate Reborn Again: Why the Constitution Should Act as a Checking Mechanism for ICANN's Uniform Dispute Resolution Policy*, 27 HAMLINE J. PUB. L. & POL'Y 307 (2006).

94. AFFIRMATION, *supra* note 1, ¶ 8 ("ICANN is a private organization").

95. *See* Joe Sims & Cynthia Bauerly, *A Response to Professor Froomkin: Why ICANN Does Not Violate the APA or the Constitution*, 6 J. SMALL & EMERGING BUS. L. 65, 66 (2002).
On the other hand, ICANN's official pronouncements still push the standard-setting story in the face of all the evidence. For example, "ICANN does not create or make Internet policy. Rather, policy is created through a bottom-up, transparent process involving all necessary constituencies and stakeholders in the Internet Community." *ICANN Factsheet*, ICANN, http://www.icann.org/en/factsheets/fact-sheet.html (last modified Aug. 13, 2010).

96. *E.g.*, R. Shawn Gunnarson, *ICANN's Weak Accountability Remains a Problem*, CIRCLEID (Jan 19, 2010, 1:09 PM PST), http://www.circleid.com/posts/icanns_weak_accountability_remains_a_problem; Kieren McCarthy, *Accountability and Transparency at ICANN? Not Looking Good*, KIEREN MCCARTHY [DOTCOM] (June 16, 2010), http://kierenmccarthy.com/2010/06/16/accountability-and-transparency-at-icann-not-looking-good.

97. *See*, *e.g.*, Grant Gross, *New ICANN Agreement Runs Into Criticism*, TECHWORLD (Oct. 2, 2009, 06:39), http://www.techworld.com.au/article/320747/new_icann_agreement_runs_into_criticism.

98. Press Release, Coal. Against Domain Name Abuse, CADNA Asserts That the ICANN Affirmation of Commitments Falls Short (Sept. 30, 2009), http://www.cadna.org/en/newsroom/press-releases/iccan-affirmation-of-commitments-falls-short.

leaving the ICANN Board with the same decision-making autonomy it has enjoyed since it revised its Bylaws to dispense with the need for community consensus.[99]

Another line of critique has focused on who gained power as the U.S. gave some up: the GAC and insider business interests. The GAC's increasing ascendency is somewhat ironic as ICANN was originally founded as a means to *privatize* the DNS. Version 1.0 of the ICANN Bylaws imagined an international board, but one drawn entirely from the private sector—government officials were not allowed to be Board members.[100] As described above, over time ICANN allied itself with non-U.S. governments as a way to extract the U.S. from its directly controlling role, and also as a way to head off non-U.S. support for alternatives to ICANN based in the ITU or the United Nations. In ICANN's latest evolution, rather than being fully privatized, the DNS is instead semi-internationalized.[101]

The role of business interests remains strong. As one perceptive critic put it,

> [W]hile ICANN may be a public interest organisation on paper, in practice it is heavily dominated by large businesses, in particular those US-based, who seem to be willing to go to considerable lengths to defend their interests. The [Affirmation] has done nothing to check these tendencies. The review panels suggested are an internal affair, where those who develop policy will get to appoint the people who will assess the policy development processes, and most of those appointed, too, will come from within the organisation. While the suggested wider involvement of ICANN communities, including governments, in reviewing the organisation is a welcome move, it remains to be seen, then, to what extent these review panels will have teeth – in any case their recommendations are not binding. But some go even further and argue that the [Affirmation] has effectively removed the one democratic control that existed over ICANN's Board: that of the US Government. As the communities that supposedly make up ICANN do not have the power to unseat the Board, the Board now is effectively accountable . . . to none.[102]

Indeed, if it didn't have it before, the Affirmation now clearly gives

99. MILTON MUELLER, IGP, ICANN, INC.: ACCOUNTABILITY AND PARTICIPATION IN THE GOVERNANCE OF CRITICAL INTERNET RESOURCES 17 (2009).

100. "Notwithstanding anything herein to the contrary, no official of a national government or a multinational entity established by treaty or other agreement between national governments may serve as a Director." ICANN, *supra* note 28, art. V § 5.

101. *Cf.* Avri Doria, *Post JPA: Tempered Happiness*, CIRCLEID (Sept. 30, 2009, 7:36 PM PST), http://www.circleid.com/posts/post_jpa_tempered_happiness (making a similar critique).

102. Kovacs, *supra* note 91.

ICANN the freedom to decide what sort of organization it wants to be. Perhaps it will live up to its Affirmation of some very fine goals and commitments. Yet the very process that produced the Affirmation itself—one characterized by near-total secrecy in both drafting and approval,[103] followed by what appears to have been selective advance release of the text to friendly outside parties in order to get good press[104]—suggests that ICANN's unusually limited definition of "maximum feasible" transparency[105] remains evidence of ICANN's persisting lack of commitment to genuine transparency and accountability.

ICANN has the freedom to change. The question is whether, now that it is freed from many of the political constraints that have shaped, or perhaps even deformed it, ICANN sees a need to change or is happy as it is.[106]

II. DOES THE DNS MATTER?

Ten years ago, I asserted that "[c]ontrol of the root potentially confers substantial economic and political power."[107] The removal of a part of the United States's control over ICANN provides an occasion to revisit that assertion.

It may seem odd to even address that issue at this juncture. After all, much of the pressure that convinced the U.S. Government to relax its hold on ICANN came from foreign allies convinced that there was something unfair, improper, or at least unseemly about the U.S.'s dominant role over a critical piece of an increasingly global network.

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103. *See* Edward Hasbrouk, *ICANN's New Commitment to Transparency Arrives Via Secret Process*, ICANNWATCH (Sept. 30, 2009, 6:59 AM), http://www.icannwatch.org/article.pl?sid=09/09/30/165214.

104. "It is extremely obvious that ICANN and NTIA gave advance preview access to a select number of cheer leading insiders in order to accumulate a nice opening day press release." Karl Auerbach, *Independent – Not So Fast*, Comment to *New Agreement Declares ICAAN Independent*, CIRCLEID (Sept. 30, 2009, 2:49 PM PST), http://www.circleid.com/posts/new_agreement_declares_icann_independent/#5796.

105. "ICANN and its constituent bodies shall operate to the maximum extent feasible in an open and transparent manner and consistent with procedures designed to ensure fairness." ICANN, BYLAWS art. III § 1 (Sept. 30, 2009), http://www.icann.org/en/general/archive-bylaws/bylaws-30sep09-en.htm#III.

106. A related question is whether ICANN will burnish its claims to legitimacy. On the issue of ICANN's legitimacy, *see* Sebastian Botzem & Jeanette Hofmann, Transnational Governance Spirals: The Transformation of Regulatory Authority in Internet Governance and Corporate Financial Reporting (2010) (unpublished manuscript), *available at* http://duplox.wzb.eu/people/jeanette/pdf/BotzemHofmann_2010_draft.pdf; Jonathan Weinberg, *Non-State Actors and Global Informal Governance -- The Case of ICANN, in* INTERNATIONAL HANDBOOK ON INFORMAL GOVERNANCE (Thomas Christiansen & Christine Neuhold eds. forthcoming 2011), *available at* http://faculty.law.wayne.edu/Weinberg/informal.governance.chapter.revised.pdf.

107. Froomkin, *supra* note 4, at 21.

Academics complained; one went so far as to bemoan "the totalitarian control of the Internet by the United States."[108] Similarly, influential voices in the U.S. warned that to let go of the DNS would be to abandon a unique strategic asset. For example, leading members of the House Subcommittee on Communications Technology and the Internet wrote to the DOC as the JPA was due to expire, requesting many of the features that ultimately found their way into the Affirmation—and ended by requesting "a continued role for the Department of Commerce" in ICANN.[109]

The possible risks of having a body—be it public or private—in charge of the DNS can be grouped into four categories: (1) primarily economic issues involving market power over DNS service providers (registrars and registries), (2) economic power exercised over registrants and other third parties, (3) more general political power over speech or other uses of the Internet, and (4) geo-strategic.[110] Some of these, it turns out, are much more real dangers than others.

Many of the concerns about who controls the root remain valid, particularly those relating to the ability to shape or control the market for domain names, and a number of trademark-related issues, or issues arising from attempts to solve the trademark issues. But some other worries about the DNS now seem somewhat inflated. Still others, perhaps like the DNS itself someday, may be falling victim to technical change.

A. Economic and Market Power Over Domain-Name Service Providers

Most obviously, the power to control the root includes the ability to decide which TLDs are visible to the vast majority of Internet users who rely on the legacy root. The power to create is also, largely, the power to destroy. Thus, ICANN can make visible and usable—or nearly invisible and largely useless—TLDs such as .com or .ibm. It can re-delegate a TLD from one registry to another.[111]

TLDs are valuable[112] and people want them. Further, the power to

108. Konstantinos Komaitis, *Aristotle, Europe and Internet Governance*, 21 PAC. MCGEORGE GLOBAL BUS. & DEV. L.J. 57, 57 (2008).

109. Letter from Henry A. Waxman, Chairman, Comm. on Energy & Commerce, et al., to Hon. Gary Locke, Sec'y, U.S. Dep't of Commerce (Aug. 4, 2009), *available at* http://internetgovernance.org/pdf/doc044-2.pdf.

110. Other issues, not considered in this paper, have to do with the specification of technical parameters such as new character sets (IDNs), DNSSEC, and IPv6.

111. All that is required, technically, is a change to one line in the root zone file. *See supra* note 17.

112. Estimates of new TLD values vary widely depending upon the TLD name, its relationship to established TLDs, and the estimated demand for second-level registrations. *See*

control TLDs can be leveraged into power over registries, and through them registrars. ICANN has used its power to limit the number of new TLDs, pick winners (or, some would claim, play favorites), and determine business models and domain name market structure (in both pro- and anti-competitive fashions). Since ICANN reserves the right to pass on the semantic validity of names, it has also been drawn into controversies about what terms are suitable for registration. Controversies include ICANN's rejection of ".iii" at the eleventh hour on the ground that it was hard to say,[113] and the rejection of ".xxx"—a decision subsequently found to be "not consistent with the application of neutral, objective and fair documented policy" in an International Chamber of Commerce arbitration held pursuant to ICANN's Independent Review Process.[114]

As it creates new TLDs, ICANN has also imposed various limits on what names they can register and to whom they can be offered. ICANN requires new global top level domains ("gTLDs") to use a "landrush" system in which trademark holders get first dibs on names matching their trademarked character strings—even if the term has multiple meanings or is generic for some other use.[115] It also has a list of reserved words, primarily country names, that new gTLDs are not allowed to allocate to anyone.[116] This is an exercise of real power, and it is being exercised in service to the interests represented in the GAC, even though there is no relevant law in most countries, nor at the international level, that would require the owner of the TLD to withhold those potentially valuable names from the market.[117]

ICANN also uses its power over the root to "tax" (require

Alex Tajirian, *Examining Value in New ICANN TLDs on Search and Navigation, Companies, Domain Registries*, CIRCLEID (Aug. 14, 2009, 11:21 AM PST), http://www.circleid.com/posts/examininng_value_in_new_icann_tlds. In 2000, the government of Tuvalu leased out their ccTLD ".tv" for $50 million over a twelve-year period. CENT. INTELLIGENCE AGENCY, THE WORLD FACTBOOK, https://www.cia.gov/library/publications/the-world-factbook/geos/tv.html (click on the drop box entitled "Introduction") (last visited Nov. 6, 2010).

113. *See* Jonathan Weinberg, *ICANN, "Internet Stability," and the New Top Level Domains*, *in* COMMUNICATIONS POLICY AND INFORMATION TECHNOLOGY: PROMISES, PROBLEMS, PROSPECTS 3, 18 (Lorrie Faith Cranor & Shane M. Greenstein eds., 2002).

114. *See* ICM Registry, LLC v. Internet Corp. for Assigned Names & Nos., Int'l Ctr. for Dispute Resolution, at 70 (Feb. 19, 2010).

115. The classic example is an imaginary claim by the holder of the (then valid) trademark on "computer brand socks," COMPUTER, Registration No. 1,282,545, to be given the rights to computer.tld, even though "computer" is generic for something other than footwear.

116. *See* ICANN, DRAFT APPLICANT GUIDEBOOK, VERSION 4 annex Separable Country Names List (2010); TIMOTHY DENTON & MAWAKI CHANGO, ICANN AND IANA RESERVED NAMES (2007); s*ee also*, *e.g.*, ICANN, .AERO AGREEMENT APPENDIX 6 SCHEDULE OF RESERVED NAMES (2009), http://www.icann.org/en/tlds/agreements/aero/aero-appendix-6-11jun09-en.htm.

117. Froomkin, *supra* note 84, at 840.

contractual payments from) the registrars and registries,[118] costs that in most cases are passed on to the end-user. That ICANN determines the market structure for domain names is not a critique, but rather a design feature—something built into its DNA from the seminal White Paper that called ICANN into being. And while ICANN has not created nearly as much competition among registry terms of service as one might hope for, its early moves in particular broke NSI/VeriSign's monopoly as the only commercial domain registrar that mattered. There is now a flourishing competitive market in new domain name registrations, albeit one marked by a certain lack of attractive new stock and by various technology-based attempts to corner the market in abandoned names.[119]

One economic risk is that ICANN (or any other party controlling the DNS) might abuse its power by seeking extortionate payments (rents) from the registrars or registries. As ICANN's status as a nongovernmental body becomes increasingly solidified, it should become increasingly uncontroversial that the appropriate constraint on these negotiations come from private law and ordinary regulation, particularly anti-trust law.[120] In this context, ICANN's promise to remain in the U.S., and thus remain subject to U.S. anti-trust law is significant. So too is its promise to have offices around the globe, potentially making it subject to local private law remedies where it has offices, and also to the competition law jurisdiction of the EU.[121]

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118. In the 2009 fiscal year, ICANN raised $60 million, $54.8 million of which came from domain name registry and registrar fees. ICANN, 2009 COMPLETE REPORT: ADDRESSING THE GLOBAL INTERNET 58 (2009). This represents a $10 million revenue increase over 2008, nearly all of which came from the domain name registry and registrar fees. *Id.*

119. *See*, *e.g.* Jonathan Zittrain & Benjamin Edelman, *Technical Responses to Unilateral Internet Authority: The Deployment of VeriSign "Site Finder" and ISP Response*, BERKMAN CENTER FOR INTERNET & SOCIETY, http://cyber.law.harvard.edu/tlds/sitefinder (last updated Oct. 7, 2003); Declan McCullagh, *ICANN Approves Wait List for Desired Domains*, CNET NEWS (Mar. 9, 2004), http://news.cnet.com/ICANN-approves-wait-list-for-desired-domains/2100-1038_3-5171809.html; ICANN SEC. & STABILITY ADVISORY COMM., SAC 022: SSAC ADVISORY ON DOMAIN NAME FRONT RUNNING (2007) (describing "front running," the practice of monitoring and preemptive registration of domain names searched for but not reserved by a potential registrant).

120. *See* Coalition for ICANN Transparency, Inc. v. VeriSign, Inc., 611 F.3d 495, 505-07 (9th Cir. 2010) (citing A. Michael Froomkin & Mark A. Lemley, *ICANN & Antitrust*, 2003 U. ILL. L. REV. 1, 72-73) (rejecting application of Noerr-Pennington immunity doctrine to VeriSign's transactions with ICANN).

121. Prior to the Affirmation, European Union Media and Telecommunications Commissioner Viviane Reding called for an "independent, international tribunal" to review ICANN's decisions. *See* Eric Pfanner, *New Chief Defends U.S. Base for Agency that Manages Web*, N.Y. TIMES (July 13, 2009), http://www.nytimes.com/2009/07/13/technology/internet/13iht-icann13.html. Having ICANN present in the EU and subject to its jurisdiction would seem at least as likely to achieve the EU's regulatory objectives regarding competition law, although perhaps not as much in other realms where the court option is less likely to be effective.

Another economic risk is that control of the DNS could be abused to erect anti-competitive barriers to entry to the market for new domain names, or structure the market oligopolistically. At present in the registry market, there are not significant barriers to entry, but there are some obstacles to price and service competition. ICANN's levies on market participants put a floor on prices. And ICANN's requirement that registrars impose some standard contract terms on registrants limits service competition in the service of third parties, that is, trademark holders.[122] This in turn creates the possibility that, as a result of limitations in the domain names available, late entrants to the Internet and especially smaller businesses and startups might find it more difficult to market online due to the shortage of semantically attractive domain names.[123]

B. Regulatory Power Over Registrants and Other End-Users

More importantly, ICANN's power over the end-user extends well beyond the economic realm in which it can set a fee of a dollar or more per domain name. By requiring the registries—as a condition of being listed in the root—to require the registrars to include standard form terms in their contracts with registrants, ICANN gains a degree of control over registrants, at least to the extent that a registrar could impose terms in a contract with the end-user. To date, ICANN has used this power only for matters ostensibly relating to trademark issues raised by domain name registrations, most notably its imposition of the Uniform Domain Name Process ("UDRP")[124] and retention of anti-privacy rules relating to the "whois" function.[125]

The interesting question, therefore, is how much this ability to impose contractual legal duties on domain name registrants could be used for other things, too. In theory, ICANN (or any other entity controlling the root) could attempt to leverage that control in either of two ways. First, and more plausibly, control over the root could be used to impose additional contract terms on registrants in service of social goals. Various suggestions have been floated over the past decade,

122. *See generally* A. Michael Froomkin, *ICANN's "Uniform Dispute Resolution Policy"—Causes and (Partial) Cures*, 67 BROOK. L. REV. 605 (2002).

123. *See* Karl Manheim & Lawrence Solum, *An Economic Analysis of Domain Name Policy*, 25 HASTINGS COMM. & ENT L.J. 359 (2003); *see also* Jonathan G.S. Koppell, *Pathologies of Accountability: ICANN and the Challenge of "Multiple Accountabilities Disorder*," 65 PUB. ADMIN. REV. 94, 101 (2005).

124. *See* Froomkin, *supra* note 122, at 651-52 (relating to imposition of UDRP).

125. On conflicts between ICANN's Whois policy and privacy laws, see Letter from EPIC & NGO to ICANN Board on Need for Whois Reform (Oct. 30, 2007), *available at* http://ipjustice.org/wp/2007/10/30/epic-ngo-letter-to-icann-board-on-need-for-whois-reform.

including proposals that ICANN require registrants to enforce copyright laws, remove some classes of hate speech, agree to takedown provisions, or otherwise assist law enforcement or others in the enforcement of legal or social policies. These suggestions have all differed from the UDRP in one critical fashion: whatever its merits or evils, the UDRP is designed to combat an ill—cybersquatting—that is a direct result of the structure of the DNS. In contrast, all of the other proposals that have bubbled up from time to time involve harms that are not direct results of the DNS; they may be torts or crimes that result from use of the Internet, but they are not specific to the DNS[126] and so far ICANN, to its credit, has shown no appetite for taking them on.

Somewhat less plausibly, control over the root also might be used to require that registrants themselves impose terms on parties with whom they contract either directly or indirectly via "web wrap"[127] contracts with people who visit their websites or read their e-mails. Thus, everyone registering a domain name would have to agree, for example, that it would never be used to infringe a copyright or send a threatening e-mail from a user address at that domain. In theory, this obligation on the registrant to bind his customers or readers would work in a manner akin to the way that ICANN requires registrars to impose contracts on their registrants. But in fact, the scope for such terms in domain name agreements must be extremely limited. For starters, it is far from obvious that such terms would be effective, especially in consumer contracts, in many parts of the globe. More fundamentally, there is only so much that most registrants would put up with before walking away from domain names and towards some alternative.[128]

C. Political Power Over Speech and Other Uses of the Internet

Control of the root arguably might translate into political power. In particular some have warned that control of the root could be used to limit freedom of expression,[129] while others have sought to harness the

126. The theoretical exception to this principle might be second (or higher-level?) domain names that were themselves obscene, harassing, or threatening. Presumably because this is at most a very minor problem compared to the number of names registered, there has been no serious effort to address this through the ICANN process.

127. Also known as "browsewrap" agreements, a "web wrap" contract is one in which the consumer is said to be bound by viewing the agreement. On the validity of these agreements, *compare* ProCD, Inc. v. Zeidenberg, 86 F.3d 1447 (7th Cir. 1996), *with* Step-Saver Data Sys., Inc. v. Wyse Tech., 939 F.2d 91 (3d Cir. 1991), *and* Ticketmaster Corp. v. Tickets.com, Inc., CV 99-7654 HLH (BQRx), 2000 U.S. Dist. LEXIS 4553 (C.D. Cal. Mar. 27, 2000).

128. Many social networks flourishing online already use addressing schemes independent of the DNS. Twitter, for example, handles all message traffic between users within its single domain. *See also infra* text at note 151 (noting importance of online search).

129. The danger is already manifest in cases of product or brand criticism, which can lead to a domain name being reassigned under ICANN's uniform dispute resolution policy. *See*

power conferred by the root for what they see as the good,[130] causing yet others to warn of ICANN-enforced domination of the Internet.[131]

Control over the DNS can clearly be used to restrict the semantic content of TLDs—and as noted above, it is being used that way today. Under the current ICANN regime there is never going to be a .god or .satan domain name both because too many people would find it offensive or at least controversial, and because the process of picking the body to run them would be highly contentious. I and many others long ago proposed that ICANN should not attempt to control the semantic content of TLDs, but rather should only pass on the technical and organizational bona fides of applicants. Once cleared, they could pick any name they wanted that was not already taken. This proposal would have made highly controversial names possible, yet shielded ICANN from the blame. Even so, it did not attract much support, perhaps because it would have reduced ICANN's power over applicants, or because it created the possibility of conflicts between TLDs if someone picked a name too similar (in the eye of some beholder) to an already-existing name.[132]

But even if deities and demons will not be TLDs, they can be, and are, second-level domains.[133] The lost expressive value of a TLD seems

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SUSAN SCHIAVETTA & KONSTANTINOS KOMAITIS, ICANN'S ROLE IN CONTROLLING INFORMATION ON THE INTERNET (2003); Froomkin, *supra* note 122, at 664; Jonathan L. Schwartz, *Making the Consumer Watchdog's Bark As Strong As Its Gripe: Complaint Sites and the Changing Dynamic of the Fair Use Defense*, 16 ALB. L. J. SCI. & TECH. 59, 78 (2006).

130. *E.g.* Cheryl B. Preston, *Internet Porn, ICANN, and Families: A Call To Action*, 12 J. INTERNET L. 3 (2008).

131. For example, there is this somewhat overwrought warning:

> Down the road, one can imagine demands from Brussels that ICANN cooperate with EU efforts to tax commercial sales negotiated over the Internet. Or perhaps it will demand a new understanding aimed at forcing top level domain managers to uphold EU privacy standards against U.S. government security measures.

Jeremy Rabkin, *Careful What You Wish For: Why ICANN "Independence" is a Bad Idea*, CIRCLEID (June 22, 2009, 5:50 AM PST), http://www.circleid.com/posts/20090622_careful_what_you_wish_icann_independence_bad_idea.

132. The desire to prevent semantic confusion must be seen as a policy goal of ICANN and/or of governments influencing it although the right to protect a TLD from confusion by excluding alternatives is not rooted in law: most authorities agree that a TLD cannot be a trademark. *See*, *e.g.*, U.S. DEPT. OF COMMERCE, PATENT & TRADEMARK OFFICE, EXAMINATION GUIDE NO. 2-99, MARKS COMPOSED, IN WHOLE OR IN PART, OF DOMAIN NAMES (1999), *available at* http://www.uspto.gov/trademarks/resources/exam/guide299.jsp ("When a trademark, service mark, collective mark or certification mark is composed, in whole or in part, of a domain name, neither the beginning of the URL (http://www.) nor the TLD have any source indicating significance.").

133. *E.g.*, god.com and satan.com, both of which are registered to a party protecting its identity, with only the following showing under whois: c/o Nameview Inc. Whois IDentity Shield, PO Box 152, Britton's Hill, St. Michael, Barbados. (This information can be obtained by running the "whois" command on any UNIX computer connected to the Internet; i.e. by

quite small when so many second-level alternatives are available. As for the suggestion that the DNS could be leveraged to work a major change in privacy law, it is hard to see how the controller of the root would pull this off—other than an end-user's contract with a registrar possibly being used as a jurisdictional hook by which a national government would seek extraterritorial application of a local law.

So much then for what a rational master of the root could do. But there is no certainty that the master will always be rational. The Affirmation states that "ICANN is a private organization and nothing in this Affirmation should be construed as control by any one entity."[134] Yet independence from capture is not achieved by fiat. Suppose that through a nefarious and careful plot some interest group—political, religious, or economic—were able to capture ICANN and then attempted to make the most of their control of the root without regard for long-term political or economic consequences.[135] At present, the danger of most forms of political or religious capture seems somewhat remote if only because the U.S. Government retains some leverage over ICANN as described above in part I.B.2. (Of course, some people might suggest that the U.S. Government itself might be subject to capture, or has been captured, by an interest group. But in that scenario, we have much bigger problems than misuse of the DNS.) Admittedly, the risk of capture by an economic interest group seems less far-fetched, especially given arguments that ICANN was or is captured by an alliance of trademark interests and early movers in the TLD space who conspired together—perhaps with the tacit blessing of the U.S. Government—to block new entrants into the TLD market.[136] But as noted previously, the remedy for this sort of abuse remains, for better or worse, a reference to anti-trust law.[137]

What then might a fanatical political or religious group be able to

typing "whois satan.com.").

134. AFFIRMATION, *supra* note 1, ¶ 8.

135. ICANN itself seems concerned about this prospect. *See* ICANN, IMPROVING INSTITUTIONAL CONFIDENCE IN ICANN (2008), http://www.icann.org/en/jpa/iic/improving-confidence.htm (noting dangers of capture and making recommendations to lessen danger of capture).

136. Todd Davies, *A Behavioral Perspective on Technology Evolution and Domain Name Regulation*, 21 PAC. MCGEORGE GLOBAL BUS. & DEV. L.J. 1, 24 (2008) (arguing that ICANN is at risk of "oligarchic" control); Comments of the Center for Democracy and Technology submitted to the National Telecommunications and Information Administration, U.S. Dept of Commerce, Regarding the Continued Transition of the Technical Coordination and Management of the Internet's Domain Name and Addressing System: Midterm Review of the Joint Project Agreement 8 (Jan. 25, 2008), http://www.cdt.org/dns/icann/20080128_CDT-JPA-comments.pdf (warning of capture by of ICANN by governments); Jonathan Zittrain, *ICANN: Between the Public and the Private Comments Before Congress*, 14 BERKELEY TECH. L.J. 1071, 1091 (1999).

137. See *supra* text accompanying note 120.

do? As noted earlier, there are opportunities for financial gain. And there are ways to twist the future growth of the domain system to support, or avoid hurting, beliefs about offensive semantic content of TLDs. Onerous contracts with new TLDs might limit their registrations only to approved names, or perhaps attempt to require that they police their users, but it would be no simple matter to enforce similar rules on either the existing gTLDs or ccTLDs. The gTLDs have contractual rights in their delegations, and so long as courts remain open to enforce them, ICANN is subject to their jurisdiction, and the physical root is in VeriSign's control, the ordinary procedures of the courts should be fully adequate to guard against any chicanery. The ccTLDs often have a government behind them, and short of pulling the plug or re-delegating the domain to someone else—the nuclear option—in the current contractual regime there may be little that ICANN could do to seriously damage a ccTLD.[138]

At the end of the day, the greatest risk to the domain system from control of the root comes only if governments act in concert with the root's controller. At that point, instead of civil law and diplomatic pressure working to counter-balance an attempt to leverage control of the root to achieve a social or political aim, both the technical and legal arms would be working together. That might be bad. And that is why the increasing power of the GAC might give one a slight pause. On the one hand, the existence of the GAC provides a source of external supervision over ICANN's activities; on the other hand, GAC also provides a route by which governments—in the somewhat rare event that they can broadly agree on a common goal—might be able to harness the root to some extraneous end. If, for example, governments around the globe were to decide that Internet anonymity was a bad thing that needed to be stamped out, and if they passed domestic laws prohibiting it, the field might then be open to use the root to make life difficult for Internet Service Providers ("ISPs") and website operators who provided

138. As ICANN's previous fight with ccTLDs demonstrated, there are things ICANN can do to annoy them, notably to refuse routine redelegation requests when, say, a ccTLD operator changes its machinery around. But the ccTLDs managed to muddle through a lengthy period in which ICANN mistreated them in this way, and they could surely do it again if they had to. *See* Froomkin & Lemley, *supra* note 120, at 54. It has been suggested that the U.S. leaned on ICANN to redelegate domains in countries of strategic importance to it:

> [T]wice United States-backed governments (namely Iraq and Afghanistan) have petitioned for redelegation of a country's ccTLD. Both requests were approved. While there is no evidence that the United States explicitly instructed ICANN to redelegate the .iq or the .af top-level domains, it is reasonable to conclude that ICANN felt pressure to comply because the Department of Commerce still has authority over it.

Scott P. Sonbuchner, *Master Of Your Domain: Should the U.S. Government Maintain Control Over the Internet's Root?*, 17 MINN. J. INT'L L. 183, 202 (2008).

anonymizing services.

The real prize, and the real danger here, is not the DNS: it is the IP numbering system. It is not complex to exist online without a domain name. It is impossible to exist online in today's Internet without the use of an IP number. The power over IP numbers, such as it is, comes with the IANA function. It is IANA that hands out blocks of IP numbers to the Regional Internet Registries ("RIRs"), who in turn hand them out to ISPs and others who demonstrate a need for them. And recall that IANA, at least at present, remains in ICANN's hands through a separate contract from the U.S. Government. So long as the U.S. keeps at least a reversionary interest in IP numbers by having contracts with ICANN that require routine renewal and that contain a termination clause, this danger remains fairly small. In any case, the RIRs are independent of ICANN, so there is not much ICANN can do to them except not give them new numbers. There are only five RIRs and they could act together in self-defense if ICANN were ever to try to starve them or, worse, attempted to destroy the Internet by giving the same number blocks to multiple recipients in an attempt to create IP number conflicts. The Affirmation is silent on IANA's fate, but there are powerful reasons why both the U.S. Government and ICANN might wish to preserve the status quo. On the U.S. Government's side, the IANA arrangement remains a less controversial fail-safe against the eventuality that if ICANN were ever to be captured by fanatics or otherwise go off the rails, the theoretical ability to reassign the IANA function creates a lever that the DOC could use to cripple a runaway ICANN. On ICANN's side, its status as a government contractor supplying numbers in accordance with U.S. federal policy provides a valuable shield against what might otherwise be plausible anti-trust risks. Then again, third parties outside the U.S. are watching carefully and clearly hope that the U.S. will internationalize this relationship.[139]

D. The Myth of the DNS's Geo-Strategic Power

Perhaps the strangest canard about the DNS is that control over it confers some sort of geo-strategic power.[140] From time to time writers

139. *See*, *e.g.*, Neelie Kroes, Vice-President, European Comm'n Responsible for the Digital Agenda, The Need for Accountability in Internet Governance, ICANN's 38th International Meeting (June 21, 2010), *available at* http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/10/323 ("I am hopeful that the expiry of the IANA contract next year will be turned into an opportunity for more international cooperation serving the global public interest.").

140. Various forms of this view can be found in Kim G. von Arx & Gregory R. Hagen, *Sovereign Domains: A Declaration of Independence of ccTLDs from Foreign Control*, 9 RICH. J.L. & TECH. 1, 26-28 (2002) (ccTLDs as potential military resource and DNSs role in "Strategic Information Warfare"); Larry Barker, *Information Assurance: Protecting the Army's Domain-*

have suggested that by controlling the DNS the United States enjoys some potential advantage that might be deployed in case of real war or cyber-war. The first assertion is clearly wrong; the second seems implausible also.

The scenario seems to go something like this. The United States gets into a shooting war with Ruritania. The Ruritanians rely on the Internet for critical military and civilian communications. If the U.S. could knock out Ruritanian Internet communications, it would secure a material military advantage. So far, so good. But how is control of the DNS supposed to achieve this? Apparently by the U.S. using its power over the DNS to delete Ruritania's ccTLD, bringing the nation to its virtual knees.

Like every nation, the Ruritanians have a ccTLD, which we will imagine is .rt.[141] There is no question that whoever controls the root can delete .rt from the root:

> In theory, the United States could demand that a specific country's ccTLD be erased. [In this view,] [b]ecause the Department of Commerce still has ultimate authority over ICANN, it [would be] able to bypass ICANN procedure and make demands [either that ICANN instruct VeriSign to delete .rt, or make the demand of VeriSign directly, or seize control of the computer with the root zone file.] Erasing a top-level domain would effectively [cause] all websites using that suffix [to become inaccessible to most users] and prevent . . . e-mailing [from reaching] any such addresses. An entire country's Internet presence would disappear for the majority of Internet users. [Fear of this scenario may explain] why some of the main critics of ICANN are countries with poor relationships with the United States.[142]

The introduction of DNS Security Extensions ("DNSSEC")[143] into the root zone alteration process only changes the details of this scenario in that seizing the computer controlling the root zone is no longer enough: now the U.S. Government needs access to VeriSign's key

Name System, ARMY COMMUNICATOR, SUMMER 2001, at 39, *available at* http://www.signal.army.mil/ocos/ac/Edition,%20Summer/Summer%2001/dnsia.htm (risks to military operations); Ariel Rabkin, *Who Controls the Internet?*, WKLY STANDARD, MAY 15, 2009, at 14 (political and economic influence via DNS); Sonbuchner, *supra* note 138, at 207 (controller of the DNS could create and enforce "terms of . . . use" for the Internet).

141. The list of genuine ccTLDs appears at IANA, Root Zone Database, http://www.iana.org/domains/root/db (last visited Nov. 27, 2010). At present (November, 2010), there is no .rt.

142. Sonbucher, *supra* note 138, at 203.

143. A lawyer's introduction to DNSSEC in the root can be found at Notice, Enhancing the Security and Stability of the Internet's Domain Name and Addressing System, 73 Fed. Reg. 59,608 (Oct. 9, 2008). A software engineer's introduction can be found at *Documentation*, ROOT DNSSEC, http://www.root-dnssec.org/documentation (last visited Nov. 27, 2010).

signing key as well.[144] Otherwise, as before, in order to achieve the change it wants, the U.S. Government must persuade ICANN and VeriSign, or just VeriSign, to make the change the U.S. Government demands.[145]

If, for whatever reason, the root zone file were changed to eliminate .rt, then in the ordinary course of things, as the new root zone file propagates across the net, addresses ending in .rt will stop functioning because computers no longer know where to find the .rt registry's file that would tell them where to send packets destined for .rt domains. Ruritania is in chaos! U.S. forces are met with flowers . . . wait, wrong movie . . . .

The scenario gains some potential plausibility due to the location of the root zone file in the U.S. Even if ICANN has rules prohibiting political deletions or surreptitious change of control of a domain, it is possible that if faced with a claim of national emergency VeriSign or whoever was running the server hosting the root zone file would allow the U.S. to do whatever it asked. That at least appears to be what several phone companies did when asked to allow illegal wiretaps in the name of national security.[146]

Even so, it could never work that way, and it certainly could never work that way twice.

For starters, unless the government of Ruritania is technically clueless,[147] it will have taken two simple steps that will protect it against

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144. *See supra* note 78.

145. Other than the fact that VeriSign operates this computer as a U.S. Government contractor, I am not aware of any legal authority that would require VeriSign to accede to such a request. The IANA contract might arguably provide legal cover for this act, although there is certainly nothing in there that would require it. The IANA Contract states that the IANA function

> includes receiving delegation and redelegation requests, investigating the circumstances pertinent to those requests, and making its recommendations and reporting actions undertaken in connection with processing such requests. This function, however, does not include authorizing modifications, additions, or deletions to the root zone file or associated information that constitute delegation or redelegation of top level domains. (This purchase order does not alter root system responsibilities as set forth in Amendment 11 of the Cooperative Agreement NCR-9218742 between the DoC and VeriSign, Inc.).

IANA Contract, *supra* note 15, § C.2.1.1.2. Amendment 11, *supra* note 76, does not explicitly consider whether NSI/VeriSign could ever act independently of ICANN, although the section on "Recognition of NewCo" could be read to suggest not. In any event, the U.S. Government could always request, even demand, VeriSign's cooperation citing national security, even if there were no contractual grounds for doing so. And VeriSign, if it agreed cooperation was in the national interest, or otherwise served a corporate interest, might agree to do what it was asked.

146. *See In re* Nat'l Sec. Agency Telecomms. Records Litig., 700 F.Supp.2d 1182 (N.D. Cal. 2010) (most recent proceeding in a lawsuit alleging systematic surreptitious and illegal domestic wiretaps by NSA).

147. Just as all criminals are not clever, so too all governments are not technically adept.

the disappearance of the .rt domain. First, it will have registered many names in .com or some other TLD and pointed those names to its critical sites as backups. Second, it will have recorded the IP numbers of the most critical sites, burned them to CDs, and distributed those disks to its military and critical infrastructure. If the .rt domain suddenly starts disappearing, then forewarned internet users in Ruritania will start using the alternate domain names or will fire up the emergency CD and write over their cached copy of the zone file.

More insidiously, the U.S. could quietly enter a re-delegation into the root, grabbing control of .rt. Then the U.S. would mirror the old .rt information on its new machine and use its control to enable traffic analysis and perhaps even eavesdropping. As the U.S. built up a database of .rt second-level domains from the queries it received, or by other national technical means, it could quietly insert some changes in the .rt second level records that would send all traffic to a U.S. machine before being sent on to its original destination. This attack is subtler, but Ruritanian technologists should be able to detect it almost instantly by monitoring the root which, after all, is public and must be visible in order to achieve its function. If the delegation of .rt changed, they could sound the alarm and apply the same counter-measures as in the more direct deletion scenario.

Next, consider the reaction of key Internet players such as major ISPs. Ordinarily they set their computers to mechanically copy alterations in the master zone file and to use the most recent file to serve their users. But if they become aware that the file has been intentionally tampered with for political reasons, at least some of them will go to their backup copies and manually restore .rt to their cached copies of the root. Certainly any ISPs in .rt will be forced to restore it, and internal .rt communications will recover quickly; how much the outside world will be able to send in data will depend on how the world internet technical community responds initially.

But that's not all. Even if the disruption were effective for a day or two due to the Ruritanian failure to anticipate and plan for the problem, the international community would ensure that it never happened again by switching to an alternate system that no longer relied on a file that the U.S. could manipulate single-handedly.[148] The bottom line is that whatever geo-strategic power exists over the root, it can only be exercised

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Even so, what are the odds of there being a large number of foreign governments technically adept enough to have their militaries rely on Internet communications and addresses provided via the national ccTLD, yet not take basic steps to protect those communications?

148. *See* Froomkin, *supra* note 4, at 49 (arguing that such a ploy would work only once because the international community would immediately stop mirroring ICANN's root server regardless of whether it split the root).

once, if at all.

CONCLUSION

As a legal document, the Affirmation itself is a paper tiger. It may not be a contract; even if it is a contract, there is no practicable way for either of the parties to enforce it (and almost no promises by the U.S. Government). Although both parties have a right to cancel the Affirmation upon notice, it is difficult to imagine circumstances in which either party would have anything to gain by such an act—and is also not that easy to imagine circumstances in which the cancellation would actually make a legal difference to either party. Indeed, the most important legal aspect of the Affirmation is that it is not the JPA which it replaced, for the JPA had some teeth.

In contrast, the Affirmation likely will be much more meaningful as a political document. By announcing in the Affirmation that it would allow the JPA to lapse, the U.S. signaled that it was giving up the most visible of its claims to direct control of ICANN. In so doing, it gave up powers that it could reasonably have calculated it would be unlikely to use: there must be some non-zero risk that ICANN could be captured by an ideological faction but, unlike the risk of economic capture, ideological capture does not seem a major worry at present. By further enhancing the power of the GAC, the U.S. DOC sought, with it appears some success, to meet the most vociferous critics of the unique U.S. role in the governance of the DNS (or, if you prefer, background supervision of the governor of the DNS) more than half way, yet without completely giving up its fail-safe powers, those deriving from the IANA contract and from ICANN's domicile in California.

If the U.S. won some breathing room from its critics, and the international community achieved a large step towards its agenda of internationalizing the control of the governance of the DNS, the biggest winner from the Affirmation undoubtedly remains ICANN itself. ICANN is now free of U.S. Government control (except perhaps at the extreme margin) and yet still substantially free of real control by other governments. World governments must channel their influence via the GAC. The GAC has real influence over ICANN, but it does not have control. This fact, and the fact that the residual U.S. influence is not totally eradicated, has caused some non-U.S. leaders to call for yet more divestment by the U.S., but so far these calls have been rare.[149]

Newly unchained, or at least on a very long leash, ICANN enjoys unprecedented freedom to shape its own fate and to decide what sort of body it wants to be. In losing the specter of undue U.S. influence,

149. *See e.g.*, Kroes, *supra* note 139.

ICANN has also lost its major excuse for failing to live up to its professed ideals of transparency and accountability to the wider Internet community. What will happen next depends in large part on the extent to which ICANN's struggle for autonomy has shaped its DNA, and to what extent ICANN is ready to transcend its past. Developments to watch include the unfolding of the ICANN–GAC relationship, whether ICANN's budget continues its rapid growth or stabilizes, and whether ICANN's new freedom allows it to move forward on new gTLDs.

The DOC's next big decision will come no later than September 30, 2011, when the DOC must decide the fate of the IANA contract.[150] Until then at least, ICANN is unlikely to make any new moves to leverage its power over the legacy root in order to control the behavior, much less the speech, of end-users in any realm other than the trademark arena already occupied by the UDRP. The fear that it might attempt to expand its reach, either on its own or if captured by some outside group, remains the major argument for the U.S. to retain its hold on the IANA function. On the other hand, if the U.S. accepts that, as argued above, the DNS lacks geo-strategic value, the U.S. may be more willing to let go.

In time, geo-strategy may not be the only arena in which the DNS's centrality diminishes. If it is true that "[e]ighty percent of all online sessions begin with search,"[151] then the DNS's importance to the World Wide Web is well into its decline. Of course, the Web is not the Internet; many other services from e-mail to video transport rely on the DNS also. But the example of search, combined with the growth of "walled garden" discursive communities such as MySpace and Facebook, plus virtual worlds such as Second Life and World of Warcraft, all suggest that the long-predicted moment when the human-readable names for Internet addresses that the DNS enables begins to lose its importance really is just around the corner.

Meanwhile, however, until something contactless like phone-to-phone Bluetooth takes off, we will still need a human-friendly address to give to new potential correspondents in one-to-one relationships. Internet broadcasters, or their fine-tuned heavily personalized successors, will need some way to advertise their presence and make it easy for users to find them. At present, a nice memorable Web address works well on a business card, the side of a bus, or in a short radio or TV commercial. Thus, ICANN remains important because even if control of the DNS has limited political relevance, that control still has substantial economic importance—so long as the DNS's hegemony of convenience continues.

150. *See supra* note 15.

151. Jonathan Richman, *4 Technologies That Are Killing the URL*, IMEDIA CONNECTION (July 27, 2009), http://www.imediaconnection.com/content/23912.asp.

POSTSCRIPT

As this article went to press, the National Telecommunications and Information Administration (NTIA), the agency within the Department of Commerce charged with interacting with ICANN, set off the U.S. government's first public post-Affirmation dispute with ICANN in a letter from Assistant Secretary of Commerce Lawrence E. Strickling protesting ICANN's plans to restart the new generic top-level domain ("gTLD") application process.[152]

The gTLD issue has been one of the most contentious and long-running disputes at ICANN. There are many applicants who seek new gTLDs for a variety of reasons, ranging from a desire to enter the registry (and in some cases also registrar) market for second-level domains to a desire for a branded bespoke gTLD for internal use or marketing purposes. On the other hand, there are powerful forces both within and outside ICANN that oppose new gTLDs. Some intellectual property rights-holders fear that new gTLDs will increase trademark infringement opportunities and monitoring costs, and although they don't come out and say it, some incumbent gTLD operators—many of whom are now ICANN insiders—wish to hold on to first- and second-mover advantages.[153] Some governments also have expressed concerns as to the semantic content of potential new gTLDs on public order grounds, while other non-governmental actors have expressed technical or aesthetic objections to the proliferation of gTLDs.

After years of delay, ICANN, in 2010, took significant steps towards restarting the gTLD application process, most notably by proposing a new gTLD Applicant Guidebook,[154] and opening it up for public comment until January 15, 2011. The results and a timetable were to be voted on at ICANN's Board Meeting in Cartagena in December 2010, a few days after Assistant Secretary Strickling sent his letter.[155]

The Strickling letter contained a specific complaint about the new gTLD process and a more general complaint about ICANN's failure to re-engineer its decision-making processes "to meet the obligations

152. *See* Letter from Lawrence E. Strickling, Assistant Sec'y for Commc'ns and Info. for the Dep't of Commerce, and Adm'r, of the Nat'l Telecomm. and Info. Admin., to Rod Beckstrom, ICANN President and CEO (Dec. 2, 2010), *available at* http://forum.icann.org/lists/5gtld-guide/msg00013.html [hereinafter Strickling Letter].

153. *See, e.g.* Milton Mueller, Comment to *Why ICANN Should Ignore the NTIA's Letter*, IGP BLOG (Dec. 5, 2010, 2:35 PM EST), http://blog.internetgovernance.org/blog/_archives/2010/12/3/4694980.html#1386865.

154. *See* ICANN, GTLD APPLICANT GUIDEBOOK: PROPOSED FINAL VERSION (2010).

155. *See Welcome to the New Generic Top-Level Domains (gTLDs) Proposed Final Applicant Guidebook Public Comment Forum*, ICANN, http://icann.org/en/topics/new-gtlds/comments-5-en.htm (last visited Dec. 18, 2010).

identified in the *Affirmation* (e.g., transparency, accountability, fact-based policy development)."[156] The specific complaint was that NTIA had previously emphasized the importance of doing a full economic analysis of the possible impact of new gTLDs and that ICANN had failed to complete these studies and make them available for public comment. In his letter, Assistant Secretary Strickling asked ICANN to further delay the opening of the new gTLD application process until all the economic studies were complete. Notably absent from the Strickling letter, however, was any suggestion about what, if anything, NTIA planned to do about its complaint other than to discuss them within the GAC.[157]

There are at least three ways to read this silence: One could see the absence of any real threat as a case of the mailed fist in the velvet glove: if NTIA really has power over ICANN, it may have no need to rub ICANN's nose in it. On the other hand, the absence of any credible threat other than recourse to GAC may reflect the reality that in the post-Affirmation world there is nothing much else that NTIA could do short of invoking the nuclear options of either re-assigning the IANA contract,[158] or perhaps telling VeriSign to ignore ICANN's instructions to enter any new TLD into the root.[159]As a legal matter, the second view seems to me to be the correct one. As a political matter, there seems no chance that NTIA would unilaterally invoke either of these nuclear options just to prevent the creation of new gTLDs.

A third, and also plausible, view paints the entire exercise as simple political theater. The Commerce Department has tended to be very solicitous of the interests of intellectual property rights holders. It is likely that they have complained about ICANN's moves towards re-opening the gTLD application process. In this view, the NTIA's letter is little more than a sop to powerful interests, a way of showing that the Obama administration is doing what it can, but one sent without any real expectation that it will derail the process. This cynical view gains some support from the relative weakness of Assistant Secretary Strickling's substantive case regarding the lack of economic analysis of new gTLDs. As explained by Milton Mueller, there have in fact been a plethora of economic studies of the impact of new gTLDs, and the likely effects are well understood.[160]

On the other hand, Assistant Secretary Strickling's specific

156. Strickling Letter, *supra* note 152, at 2.

157. *Id.*

158. *See supra* text accompanying notes 88-89; *see also supra* text following note 150.

159. *See supra* note 78.

160. *See* Milton Mueller, *Why ICANN Should Ignore the NTIA's Letter*, IGP BLOG (Dec. 3, 2010, 4:52 PM EST), http://blog.internetgovernance.org/blog/_archives/2010/12/3/4694980.html.

complaint has some procedural validity, and ties in to his more general complaint about the lack of transparency and regularity in ICANN's decision-making. Even if there have been improvements in the year since the Affirmation was signed, when measured by the relatively demanding standards of the U.S. Administrative Procedures Act for example, ICANN's decision-making still leaves a great deal to be desired. It is a bedrock principle of U.S. administrative law that an agency limits its decisions to the record before it and discloses all the facts on which it plans to rely when setting out a proposed rule. ICANN works on a much more relaxed system in which it is not necessarily easy to identify all the relevant facts on which a decision may be based. For example, some of the economic studies to which Prof. Mueller refers—all of which are surely known to ICANN—were not formally part of the record ICANN assembled for public comment. And whenever the ICANN Board meets, as it was scheduled to do in Cartagena to discuss the gTLD issue, there was always the possibility that it would emerge from its (private) deliberations with an unexpected result—one that, were a U.S. administrative agency to try, would be thrown out as a "bolt from the blue" rather than a "logical outgrowth" of its proposed policy.[161] In the event, the Board voted in Cartagena to accept many of the gTLD-related recommendations, but to delay the new gTLD process in order to continue discussions with the GAC regarding its continuing claim that governments should have a right to block new gTLDs they dislike on grounds that they violate "morality and public order" or contain geographic identifiers.[162]

In the past, ICANN's explanations for its decisions have varied in detail, rarely reaching the level that U.S. administrative agencies must achieve in a final Notice of Rulemaking. Such flexibility is on the one hand the hallmark of privatized governance, and on the other hand also its bane.

161. *See, e.g.*, Shell Oil Co. v. EPA, 950 F.2d 741, 750 (D.C. Cir. 1991) (holding final rule cannot be a "bolt from the blue"); Phillip M. Kannan, *The Logical Outgrowth Test in Rulemaking*, 48 ADMIN. L. REV. 213, 214-15 (1996).

162. *See* ICANN, ADOPTED BOARD RESOLUTIONS § 2 (Dec. 10, 2010), http://icann.org/en/minutes/resolutions-10dec10-en.htm#2.

APPENDIX

AFFIRMATION OF COMMITMENTS BY THE UNITED STATES DEPARTMENT OF COMMERCE AND THE INTERNET CORPORATION FOR ASSIGNED NAMES AND NUMBERS

1. This document constitutes an Affirmation of Commitments (Affirmation) by the United States Department of Commerce ("DOC") and the Internet Corporation for Assigned Names and Numbers ("ICANN"), a not-for-profit corporation. In recognition of the conclusion of the Joint Project Agreement and to institutionalize and memorialize the technical coordination of the Internet's domain name and addressing system (DNS),[1] globally by a private sector led organization, the parties agree as follows:

2. The Internet is a transformative technology that will continue to empower people around the globe, spur innovation, facilitate trade and commerce, and enable the free and unfettered flow of information. One of the elements of the Internet's success is a highly decentralized network that enables and encourages decision-making at a local level. Notwithstanding this decentralization, global technical coordination of the Internet's underlying infrastructure - the DNS - is required to ensure interoperability.

3. This document affirms key commitments by DOC and ICANN, including commitments to: (a) ensure that decisions made related to the global technical coordination of the DNS are made in the public interest and are accountable and transparent; (b) preserve the security, stability and resiliency of the DNS; (c) promote competition, consumer trust, and consumer choice in the DNS marketplace; and (d) facilitate international participation in DNS technical coordination.

4. DOC affirms its commitment to a multi-stakeholder, private sector led, bottom-up policy development model for DNS technical coordination that acts for the benefit of global Internet users. A private coordinating process, the outcomes of which reflect the public interest, is best able to flexibly meet the changing needs of the Internet and of Internet users. ICANN and DOC recognize that there is a group of participants that engage in ICANN's processes to a greater extent than Internet users generally. To ensure that its decisions are in the public interest, and not just the interests of a particular set of stakeholders,

1. For the purposes of this Affirmation the Internet's domain name and addressing system (DNS) is defined as: domain names; Internet protocol addresses and autonomous system numbers; protocol port and parameter numbers. ICANN coordinates these identifiers at the overall level, consistent with its mission.

ICANN commits to perform and publish analyses of the positive and negative effects of its decisions on the public, including any financial impact on the public, and the positive or negative impact (if any) on the systemic security, stability and resiliency of the DNS.

5. DOC recognizes the importance of global Internet users being able to use the Internet in their local languages and character sets, and endorses the rapid introduction of internationalized country code top level domain names (ccTLDs), provided related security, stability and resiliency issues are first addressed. Nothing in this document is an expression of support by DOC of any specific plan or proposal for the implementation of new generic top level domain names (gTLDs) or is an expression by DOC of a view that the potential consumer benefits of new gTLDs outweigh the potential costs.

6. DOC also affirms the United States Government's commitment to ongoing participation in ICANN's Governmental Advisory Committee (GAC). DOC recognizes the important role of the GAC with respect to ICANN decision-making and execution of tasks and of the effective consideration by ICANN of GAC input on the public policy aspects of the technical coordination of the Internet DNS.

7. ICANN commits to adhere to transparent and accountable budgeting processes, fact-based policy development, cross-community deliberations, and responsive consultation procedures that provide detailed explanations of the basis for decisions, including how comments have influenced the development of policy consideration, and to publish each year an annual report that sets out ICANN's progress against ICANN's bylaws, responsibilities, and strategic and operating plans. In addition, ICANN commits to provide a thorough and reasoned explanation of decisions taken, the rationale thereof and the sources of data and information on which ICANN relied.

8. ICANN affirms its commitments to: (a) maintain the capacity and ability to coordinate the Internet DNS at the overall level and to work for the maintenance of a single, interoperable Internet; (b) remain a not for profit corporation, headquartered in the United States of America with offices around the world to meet the needs of a global community; and (c) to operate as a multi-stakeholder, private sector led organization with input from the public, for whose benefit ICANN shall in all events act. ICANN is a private organization and nothing in this Affirmation should be construed as control by any one entity.

9. Recognizing that ICANN will evolve and adapt to fulfill its limited, but important technical mission of coordinating the DNS, ICANN further commits to take the following specific actions together with ongoing commitment reviews specified below:

9.1 Ensuring accountability, transparency and the interests of

global Internet users: ICANN commits to maintain and improve robust mechanisms for public input, accountability, and transparency so as to ensure that the outcomes of its decision-making will reflect the public interest and be accountable to all stakeholders by: (a) continually assessing and improving ICANN Board of Directors (Board) governance which shall include an ongoing evaluation of Board performance, the Board selection process, the extent to which Board composition meets ICANN's present and future needs, and the consideration of an appeal mechanism for Board decisions; (b) assessing the role and effectiveness of the GAC and its interaction with the Board and making recommendations for improvement to ensure effective consideration by ICANN of GAC input on the public policy aspects of the technical coordination of the DNS; (c) continually assessing and improving the processes by which ICANN receives public input (including adequate explanation of decisions taken and the rationale thereof); (d) continually assessing the extent to which ICANN's decisions are embraced, supported and accepted by the public and the Internet community; and (e) assessing the policy development process to facilitate enhanced cross community deliberations, and effective and timely policy development. ICANN will organize a review of its execution of the above commitments no less frequently than every three years, with the first such review concluding no later than December 31, 2010. The review will be performed by volunteer community members and the review team will be constituted and published for public comment, and will include the following (or their designated nominees): the Chair of the GAC, the Chair of the Board of ICANN, the Assistant Secretary for Communications and Information of the DOC, representatives of the relevant ICANN Advisory Committees and Supporting Organizations and independent experts. Composition of the review team will be agreed jointly by the Chair of the GAC (in consultation with GAC members) and the Chair of the Board of ICANN. Resulting recommendations of the reviews will be provided to the Board and posted for public comment. The Board will take action within six months of receipt of the recommendations. Each of the foregoing reviews shall consider the extent to which the assessments and actions undertaken by ICANN have been successful in ensuring that ICANN is acting transparently, is accountable for its decision-making, and acts in the public interest. Integral to the foregoing reviews will be assessments of the extent to which the Board and staff have implemented the recommendations arising out of the other commitment reviews enumerated below.

9.2 Preserving security, stability and resiliency: ICANN has developed a plan to enhance the operational stability, reliability, resiliency, security, and global interoperability of the DNS, which will be

regularly updated by ICANN to reflect emerging threats to the DNS. ICANN will organize a review of its execution of the above commitments no less frequently than every three years. The first such review shall commence one year from the effective date of this Affirmation. Particular attention will be paid to: (a) security, stability and resiliency matters, both physical and network, relating to the secure and stable coordination of the Internet DNS; (b) ensuring appropriate contingency planning; and (c) maintaining clear processes. Each of the reviews conducted under this section will assess the extent to which ICANN has successfully implemented the security plan, the effectiveness of the plan to deal with actual and potential challenges and threats, and the extent to which the security plan is sufficiently robust to meet future challenges and threats to the security, stability and resiliency of the Internet DNS, consistent with ICANN's limited technical mission. The review will be performed by volunteer community members and the review team will be constituted and published for public comment, and will include the following (or their designated nominees): the Chair of the GAC, the CEO of ICANN, representatives of the relevant Advisory Committees and Supporting Organizations, and independent experts. Composition of the review team will be agreed jointly by the Chair of the GAC (in consultation with GAC members) and the CEO of ICANN. Resulting recommendations of the reviews will be provided to the Board and posted for public comment. The Board will take action within six months of receipt of the recommendations.

9.3 Promoting competition, consumer trust, and consumer choice: ICANN will ensure that as it contemplates expanding the top-level domain space, the various issues that are involved (including competition, consumer protection, security, stability and resiliency, malicious abuse issues, sovereignty concerns, and rights protection) will be adequately addressed prior to implementation. If and when new gTLDs (whether in ASCII or other language character sets) have been in operation for one year, ICANN will organize a review that will examine the extent to which the introduction or expansion of gTLDs has promoted competition, consumer trust and consumer choice, as well as effectiveness of (a) the application and evaluation process, and (b) safeguards put in place to mitigate issues involved in the introduction or expansion. ICANN will organize a further review of its execution of the above commitments two years after the first review, and then no less frequently than every four years. The reviews will be performed by volunteer community members and the review team will be constituted and published for public comment, and will include the following (or their designated nominees): the Chair of the GAC, the CEO of ICANN, representatives of the relevant Advisory Committees and

Supporting Organizations, and independent experts. Composition of the review team will be agreed jointly by the Chair of the GAC (in consultation with GAC members) and the CEO of ICANN. Resulting recommendations of the reviews will be provided to the Board and posted for public comment. The Board will take action within six months of receipt of the recommendations.

9.3.1 ICANN additionally commits to enforcing its existing policy relating to WHOIS, subject to applicable laws. Such existing policy requires that ICANN implement measures to maintain timely, unrestricted and public access to accurate and complete WHOIS information, including registrant, technical, billing, and administrative contact information. One year from the effective date of this document and then no less frequently than every three years thereafter, ICANN will organize a review of WHOIS policy and its implementation to assess the extent to which WHOIS policy is effective and its implementation meets the legitimate needs of law enforcement and promotes consumer trust. The review will be performed by volunteer community members and the review team will be constituted and published for public comment, and will include the following (or their designated nominees): the Chair of the GAC, the CEO of ICANN, representatives of the relevant Advisory Committees and Supporting Organizations, as well as experts, and representatives of the global law enforcement community, and global privacy experts. Composition of the review team will be agreed jointly by the Chair of the GAC (in consultation with GAC members) and the CEO of ICANN. Resulting recommendations of the reviews will be provided to the Board and posted for public comment. The Board will take action within six months of receipt of the recommendations.

10. To facilitate transparency and openness in ICANN's deliberations and operations, the terms and output of each of the reviews will be published for public comment. Each review team will consider such public comment and amend the review as it deems appropriate before it issues its final report to the Board.

11. The DOC enters into this Affirmation of Commitments pursuant to its authority under 15 U.S.C. 1512 and 47 U.S.C. 902. ICANN commits to this Affirmation according to its Articles of Incorporation and its Bylaws. This agreement will become effective October 1, 2009. The agreement is intended to be long-standing, but may be amended at any time by mutual consent of the parties. Any party may terminate this Affirmation of Commitments by providing 120 days written notice to the other party. This Affirmation contemplates no transfer of funds between the parties. In the event this Affirmation of Commitments is terminated, each party shall be solely responsible for the

payment of any expenses it has incurred. All obligations of the DOC under this Affirmation of Commitments are subject to the availability of funds.

FOR THE NATIONAL TELECOMMUNICATIONS INFORMATION ADMINISTRATION:	FOR THE INTERNET CORPORATION AND FOR ASSIGNED NAMES AND NUMBERS:
_____	_____
Name: Lawrence E. Strickling Title: Assistant Secretary for Communications and Information	Name: Rod Beckstrom Title: President and CEO
Date: September 30, 2009	Date: September 30, 2009

RESTORING TRANSPARENCY TO AUTOMATED AUTHORITY

FRANK PASQUALE*

INTRODUCTION

Governments and firms in capitalist democracies increasingly use automated processes to allocate punishments and rewards.[1] Some of the most dynamic, profitable, and important companies in the information economy provide these assessments. For example, Google orders websites and advertisements; Internet service providers filter spam and aspire to fast-track certain content. In finance, consumer credit scoring determines who gets which loans, and credit-rating agencies can make or break investment offerings. Reputation-scoring in general is becoming a big business: companies now give scores to doctors and lawyers, landlords

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1. Felix Stalder, *Autonomy and Control in the Era of Post-Privacy*, 19 OPEN 78, 81-83 (2010) (describing a rise in automated processes using personalized data).

and tenants, restaurants and hotels. The government has used "risk scoring" in law enforcement and anti-terror contexts, and "audit flags" help the IRS find suspect tax returns.[2] All of these services utilize automated processes to bring some order to vast amounts of information.[3]

When automated social sorting first arose, it provoked widespread anxiety.[4] To quell such fears, authorities tended to emphasize the transparency and objectivity of the systems they used. A computer could treat like cases alike, dispassionately. Anyone who doubted that could "look under the hood" and see for themselves how the system operated. Patent law, with its disclosure requirements, promoted such transparency by conditioning intellectual property protection on publicly inspectable written descriptions of claims.[5]

Over time, flaws in this transparency- and objectivity-based approach to legitimating automated authority emerged. Shrewd or malicious individuals who fully understood such systems could game them. Concern over gaming provoked a shift away from transparency as a legitimation strategy; instead, ironclad secrecy has been pursued. The less the spammers, hackers, black-hat search engine optimizers, terrorists, tax cheats, or manipulators know about the shape of a system,

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2. Danielle Keats Citron & Frank A. Pasquale III, *Network Accountability for the Domestic Intelligence Apparatus*, 62 HASTINGS L.J. (forthcoming 2011), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1680390 (critiquing opacity of fusion centers' public-private partnerships).

3. Search engines in particular use algorithmic authority, which "is the decision to regard as authoritative an unmanaged process of extracting value from diverse, untrustworthy sources, without any human standing beside the result saying 'Trust this because you trust me.'" Clay Shirky, *A Speculative Post on Algorythmic Authority*, CLAY SHIRKY (Nov. 15, 2009, 4:06 PM) http://www.shirky.com/weblog/2009/11/a-speculative-post-on-the-idea-of-algorithmic-authority. There are occasional manual interventions to change search results, but the process is overwhelmingly automated via algorithms. Ira Basen, *The Algorithm Method: Programming Our Lives Away*, GLOBE AND MAIL, Nov. 26, 2010, *available at* http://www.theglobeandmail.com/news/technology/the-algorithm-method-programming-our-lives-away/article1815869/print/ ("Most [algorithms] are what engineers call "black boxes" – they convert inputs into outputs without revealing how they do it. The good ones are enormously valuable. Google's is the spine of a business that currently generates about $28-billion a year in revenues. Its secrets are not for sharing.").

4. *See*, *e.g.*, David Lyon, *Surveillance as Social Sorting: Computer Codes and Mobile Bodies*, *in* SURVEILLANCE AS SOCIAL SORTING: PRIVACY, RISK, AND DIGITAL DISCRIMINATION 13, 13 (David Lyon ed., 2003) ("Abstract data, now including video, biometric, and genetic as well as computerized administrative files, are manipulated to produce profiles and risk categories in a liquid, networked system."); LANGDON WINNER, THE WHALE AND THE REACTOR: A SEARCH FOR LIMITS IN AN AGE OF HIGH TECHNOLOGY 48 (1986) (describing responses to new technology's impact on social order).

5. Jeanne C. Fromer, *Patent Disclosure,* 94 IOWA L. REV. 539, 541 (2009) (Patent law requires an inventor to "disclose his invention to the public so that science can progress by building on the divulged knowledge.").

the better. An alternative form of intellectual property has encouraged this strategy: trade secrecy effectively creates a property right in many algorithms whose creators do not want to disclose them in patent applications. Trade secrecy law also makes it all the more important to keep algorithms secret: once they are disclosed, they lose trade secret protection as a matter of law. State secrecy complements trade secrecy law and provides even greater protection in areas where security is critical, such as when national security is at stake.[6]

The move from legitimation-via-transparency to reassurance-via-secrecy has profoundly troubling implications for the foundations of social order in the information age. Few of us understand how our cars work, but we can, in general, judge whether they have safely and comfortably allowed us to drive to our destinations. We cannot so easily judge the validity of a designation of a person as a bad credit risk, or a website as irrelevant. In many cases, outside observers cannot even understand the full array of commercial or political incentives for such designations. Where it prevails, trade secrecy makes it practically impossible to test whether these ratings are correct. The mere act of designating someone as "certain to repay a loan" makes the likelihood of repayment higher, because the highly rated individual will be more likely to get additional credit to "roll over" any troublesome debts. Similarly, a high ranking on search results can become a self-fulfilling prophecy of relevance, as the highest-ranked sites use revenue from visitors to improve the quality of their content.

Therefore, the spread of technology from machinery to social sorting threatens to entrench self-fulfilling prophecies. Those at the top of the heap succeed in large part due to their designation as likely to succeed; those at the bottom may endure cascading disadvantages. This is a particularly troubling outcome if the bases of such designations can never be discovered, let alone adequately challenged and reviewed.

Unfortunately, the law is presently stacking the deck against accountability for automated authorities. Data-gathering companies can engage in a number of legal maneuvers to hide their actions or hamper audits. For example, copyright protection is available for the original selection and arrangement of databases,[7] and can in turn be technologically reinforced by "anticircumvention measures" endorsed by

6. *See*, *e.g.*, David E. Pozen, *The Mosaic Theory, National Security, and the Freedom of Information Act*, 115 YALE L.J. 628, 671 n.198 (2005) (describing a state secrets privilege that can "deprive[] litigants of their right of access to court"); David E. Pozen, *Deep Secrecy*, 62 STAN. L. REV. 257, 260 (2010) (describing situations where citizens "are in the dark about the fact that they are being kept in the dark.").

7. U.S. COPYRIGHT OFFICE, REPORT ON LEGAL PROTECTION FOR DATABASES (1997), *available at* http://www.copyright.gov/reports/dbase.html.

the Digital Millennium Copyright Act.[8] The law of trade secrecy allows companies to recover damages from those who wrongfully disclose confidential data and code.[9] Finally, even where these forms of intellectual property fail to protect given information and tools for processing it, contractual restrictions can effectively "run with data" if one can only access the data by consenting to an end user license agreement. All of these tactics have been used to protect the intellectual property of a number of business interests, and may even spread through academia.[10]

Recent public policy battles have sparked renewed attention to the balance between secrecy and disclosure at large corporations. The financial crisis has highlighted undisclosed risks of the largest financial institutions and the confidential Federal Reserve interventions designed to keep the banking system afloat after disruptive events in the fall of 2008. The implementation of electronic health records will raise fascinating and difficult issues about the ownership and use of health data.[11] Finally, Google's growing role in ordering the Web raises fundamental questions about the proper scope of private initiative in organizing and rationing access to knowledge.[12]

In this thought piece, I will first explain why each of these three sectors—health, general purpose search engines, and finance—risks entrenching troubling trends by continuing down the path of excess secrecy and data propertization. Just as the "fair use" doctrine has deterred the overpropertization of expression, generally recognized fair information practices should include large and powerful data holders' obligation to surrender some sample of their data to entities entrusted to audit and assess the data holders' activities.[13] Objective audits will help

8. Niva Elkin-Koren, *Making Room for Consumers Under the DMCA*, 22 BERKELEY TECH. L.J. 1119, 1120 (2007) (describing how the ability to exercise "physical control over the use of copyrighted works may threaten intellectual freedom and fundamental liberties.").

9. RESTATEMENT (FIRST) OF TORTS § 757 (1939); David S. Levine, *Secrecy and Unaccountability: Trade Secrets in Our Public Infrastructure*, 59 FLA. L. REV. 135, 192 (2007).

10. *See*, *e.g.*, STEVEN SHAPIN, THE SCIENTIFIC LIFE: A MORAL HISTORY OF A LATE MODERN VOCATION 379 N.20 (2008) (listing critiques of the commercialization of the academy).

11. *See*, *e.g.*, Adele A. Waller & Oscar L. Alcantara, *Ownership of Health Information in the Information Age*, 69 J. AM. HEALTH INFO. MGMT. ASS'N 28, 28-38 (1998); Mark A. Hall & Kevin A. Schulman, *Ownership of Medical Information*, 301 JAMA 1282, 1282-1284 (2009); U.S. DEP'T OF HEALTH & HUMAN SERVS., OFFICE OF THE NAT'L COORDINATOR FOR HEALTH INFO. TECH., RECOMMENDED REQUIREMENTS FOR ENHANCING DATA QUALITY IN ELECTRONIC HEALTH RECORD SYSTEMS, 4-6 (2007).

12. Pamela Samuelson, *Google Book Search and the Future of Books in Cyberspace*, 94 MINN. L. REV. 1308 (2010).

13. In other work, I have explored the related concept of "reciprocal transparency"; the more an entity strives to learn about citizens, the more accountable its decision making should be. Frank Pasquale, Data and Power: From Individual Consent to Societal Transparency 3-6

restore confidence in automated authority.

I. UNHEALTHY SECRETS: PROPRIETARY PRICES AND ELECTRONIC MEDICAL RECORD IMPLEMENTATION

Recent controversy over health insurance reform in the U.S. has highlighted the defects of extant markets for medical products and physician and hospital services. Due to public pressure for disclosure, insurers in Massachusetts and California have recently revealed that they pay very different prices for similar services.[14] As health economist Uwe Reinhardt observes, "Only a handful of Americans truly comprehend the complex payment system for U.S. hospitals—mostly those whose job it is to set, negotiate, and study hospital prices."[15] The rise of a movement advocating "consumer directed health reform" during the Bush administration led to some small steps toward pricing transparency. Yet trade secrecy law still enables obfuscation of critical data.[16] Open government laws are also failing to fully reveal what the public sector is paying for health care. Even Medicare, a government program, has resisted releasing certain payment data.[17]

(2010) (unpublished manuscript), *available at* http://www.law.yale.edu/documents/pdf/ISP/PasqualeReciprocalTransparency.pdf; *see* Frank Pasquale, *Beyond Innovation and Competition: The Need for Qualified Transparency in Internet Intermediaries*, 104 NW. U. L. REV. 105, 167 (2010) [hereinafter *Beyond Innovation and Competition*] (discussing the power of the French agency CNIL to "require data controllers to 'ensure data security and confidentiality,' to 'accept on-site inspections by the CNIL,' and to 'reply to any request for information'").

14. Lucette Lagnado, *California Hospitals Open Books, Showing Huge Price Differences*, WALL ST. J., Dec. 27, 2004, at A1; Frank Pasquale, *Partners in Power*, CONCURRING OPINIONS (Jan. 3, 2009, 09:00 PM), http://www.concurringopinions.com/archives/2009/01/partners_in_pow_1.html ("[I]n procedures including coronary bypass, CT-scan of the chest, MRI of the brain, and ultrasound, [the expensive hospitals] appear to offer no quality edge—just far higher prices.").

15. Uwe E. Reinhardt, *The Pricing of U.S. Hospital Services: Chaos Behind a Veil of Secrecy*, 25 HEALTH AFFAIRS 57, 57-58 (2006).

16. *Id.* at 62 ("[A]ctual dollar payments [paid by insurers to hospitals] have traditionally been kept as strict, proprietary trade secrets by both the hospitals and the insurers. Recently Aetna announced that it will make public the actual payment rates it has negotiated with physicians in the Cincinnati area. That this small, tentative step toward transparency made national news speaks volumes about the state of price-transparency in U.S. health care. It remains to be seen whether that first step will trigger a larger industrywide move toward removing, at long last, the veil that has been draped for so long over the actual prices paid in the U.S. health system."); *see also* Annemarie Bridy, *Trade Secret Prices and High-Tech Devices: How Medical Device Manufacturers Are Seeking to Sustain Profits by Propertizing Prices*, 17 TEX. INTELL. PROP. L.J. 187, 188 (2009) (discussing recent claims by the medical device manufacturer Guidant/Boston Scientific that the actual prices its hospital customers pay for implantable devices, including cardiac pacemakers and defibrillators, are protectable as trade secrets under the Uniform Trade Secrets Act).

17. *See Consumer's Checkbook Loses Appeal in Medicare Data Case*, FINDLAW COMMON LAW (Feb. 2, 2009), http://commonlaw.findlaw.com/2009/02/consumers-checkbook-loses-

Classic economic theory directly relates the competitiveness of a market to the degree of information available about the products and services exchanged in it. However, health care is one of many areas where intermediaries consider information gathering either a commodifiable service in itself, or an aspect of their own competitive strategy. A corporate giant like IMS Health can charge hundreds of thousands of dollars for datasets, setting up a divide between researchers who have access to critical information about, for example, pharmaceutical prescribing patterns, and those who do not. Pharmaceutical companies also push to keep exclusive access to their own data—even when serious public health concerns arise about their products.

Health policy scholars have long demonstrated how difficult it is to develop a "market" in health care.[18] There is a "triple layer of agency" between care and patients whose *physicians'* recommendations are often constrained by an *insurer* which is chosen by the patient's *employer or government*. Many other western countries have tried to address these agency problems by establishing authoritative centers to gather

appeal-in-medicare-data-case.html. On the other hand, it must be acknowledged that Medicare releases a great deal of information at low costs, which might be ten to twenty times more expensive in the hands of a company like IMS Health. *See* Mark Schoofs & Maurice Tamman, *In Medicare's Data Trove, Clues to Curing Cost Crisis*, WALL ST. J., Oct. 26, 2010, at A1 ("Federal investigators use the database to find fraud; academic researchers mine it to compare the cost and utilization of various services; and consultants make a business out of analyzing the data for a wide variety of health-care companies."); Kristin Madison, *Defragmenting Health Care Delivery Through Quality Reporting*, *in* THE FRAGMENTATION OF U.S. HEALTH CARE: CAUSES AND SOLUTIONS 87 (Einer Elhauge ed., 2010). I have called for more data development as a goal of health care policy in a recent essay on specialty hospitals. Frank Pasquale, *Ending the Specialty Hospital Wars: A Plea for Information-Forcing Regulatory Design*, *in* THE FRAGMENTATION OF U.S. HEALTH CARE: CAUSES AND SOLUTIONS, *supra* at 235.

18. Donald R. Cohodes, *Where You Stand Depends on Where You Sit: Musings on the Regulation/Competition Dialogue*, 7 J. HEALTH POL. POL'Y & L. 54, 56 (1982) ("Medical care has a number of characteristics that distinguish it from most other products . . . . [1] Medical care services are not purchased from any desire for such services in themselves . . . [but instead the] demand . . . is derived from the 'demand' for good health. . . . [2] Medical care is only one determinant of health status, and for most people at most times it is not even a very important determinant. . . . [3] The need for medical care is unpredictable, requiring expenditures that are irregular and of uncertain magnitude. . . . [4] The need for medical care is often immediate, allowing little time for shopping around and seeking advice or alternatives. . . . [5] Consumers are usually ignorant of their medical care needs. They cannot possibly obtain the knowledge and training to diagnose their own medical care needs . . . . [And 6,] [p]hysicians, though highly trained and better able to diagnose needs and prescribed treatment, also are often uncertain about the appropriate services to provide."). FIRE industries (finance, insurance, and real estate) share some of these qualities, making whatever transparency can be provided all the more important. *But see* Omri Ben-Shahar, Frank & Bernice J. Greenberg Professor of Law, Univ. of Chicago Law Sch., Ronald H. Coase Lecture in Law & Economics: Myths of Consumer Protection: Information, Litigation, and Access (Feb. 17, 2009), http://www.law.uchicago.edu/node/426 (arguing that disclosure fails to improve consumer decision making in a variety of fields).

information (such as the National Institute for Clinical Excellence in Britain).[19]

Recent U.S. moves follow these steps in some small ways.[20] Transparency has been on the agenda of reformers, and provisions leveraging new federal powers over private health insurers require them to release key data.[21] The recently passed health insurance reform legislation requires each state exchange to force "health plans seeking certification as qualified health plans to submit to the Exchange . . . and make available to the public, accurate and timely disclosure" of a wide variety of important information.[22] The bill responds to the demands of health policy experts like Karen Pollitz, who has repeatedly pointed out the need for "rules to ensure that insurance products are understandable and marketing practices are transparent and above board."[23]

Unfortunately, other developments in health information technology threaten to undermine policies of openness. According to Phillip Longman, the $20 billion allocated in the American Recovery and Reinvestment Act (the "ARRA," also known as the "stimulus") to subsidize health information technology could be directed to proprietary systems that prevent widespread study and utilization of health records.[24] Longman asserts that the "largest and most successful example of digital

19. Frank Pasquale, *Rationing Health Care, British Style*, CONCURRING OPINIONS (Dec. 3, 2008, 4:14 PM), http://www.concurringopinions.com/archives/2008/12/rationing_healt.html ("Britain's National Institute for Health and Clinical Excellence (NICE) is at the cutting edge of an evidence-based movement aimed at reducing health care costs and getting value for money.").

20. Chris Fleming, *New* Health Affairs *Issue: Comparative Effectiveness Research*, HEALTH AFFAIRS BLOG (Oct. 5, 2010, 7:36 AM), http://healthaffairs.org/blog/2010/10/05/new-health-affairs-issue-comparative-effectiveness-research ("A national push on comparative effectiveness research is under way as a result of federal stimulus and health reform legislation.").

21. Patient Protection and Affordable Care Act § 10104(f)(2), 42 U.S.C.A. § 18031(e)(3)(A) (West 2010). This data includes "(i) Claims payment policies and practices[;] (ii) Periodic financial disclosures[;] (iii) Data on enrollment[;] (iv) Data on disenrollment[;] (v) Data on the number of claims that are denied[;] (vi) Data on rating practices[;] (vii) Information on cost-sharing and payments with respect to any out-of-network coverage[;] (viii) Information on enrollee and participant rights under this title[;] (ix) Other information as determined appropriate by the Secretary." *Id.*

22. *Id.*

23. *Making Health Care Work for American Families: Ensuring Affordable Coverage: Hearing Before the Subcomm. On Health of the H. Comm. On Energy and Commerce*, 111th Cong. 5 (2009) (statement of Karen Pollitz, Research Professor, Georgetown University Health Policy Institute); *see also* Matthew Holt *Letters to Health-Care Santa: Free Our Data*, EZRA KLEIN (Dec. 23, 2009, 3:00 PM ET), http://voices.washingtonpost.com/ezra-klein/2009/12/letters_to_health-care_santa_f_1.html ("We need health care organizations to be transparent in their practices and for patients to have full access to their data as a matter of course. One little amendment in conference could get us there.").

24. Phillip Longman, *Code Red: How Software Companies Could Screw Up Obama's Health Care Reform*, WASH. MONTHLY, July/Aug. 2009, at 19.

medicine is an open-source program called VistA," and contrasts it with proprietary systems "written by software developers who are far removed from the realities of practicing medicine."[25] Longman worries that several proprietary systems increase the chance of medical error due to restrictive licensing agreements which prohibit users from revealing system problems.[26]

In an increasingly polarized health policy landscape, a rare consensus has emerged around the need to deploy electronic medical records ("EMRs"). Computational innovation may improve health care by creating stores of data vastly superior to those used by traditional medical research. But before patients and providers "buy in," they need to know that medical privacy will be respected. Counterintuitively, trade secrecy protections for companies that compile data may ultimately undermine patients' privacy interests.

Many current discussions of EMRs erroneously conflate commercial rationales for trade secrecy with patient privacy rationales for data security. Secrecy supports "security via obscurity" strategies that can ultimately compromise both patient privacy and the types of medical research EMRs should be stimulating. For example, strong trade secrecy protections may prevent patients from even finding out about data breach-prone storage methods. If employers' uses of EMRs cannot be scrutinized, they may be more likely to "develop complex scoring algorithms based on [EMRs] to determine which individuals are likely to be high-risk and high-cost workers."[27] That use of data could shatter already fragile trust in electronic health records systems.

Data lock-ups may also create scale-driven business models that unduly tether medical research to ownership of large reservoirs of data. As Longman notes, "Electronic medical records [should] produce a large collection of digitized data that can be easily mined by managers and researchers (without their having access to the patients' identities, which are privacy protected) to discover what drugs, procedures, and devices work and which are ineffective or even dangerous."[28] Legal scholars have examined the trade-offs between data portability, standardization, privacy, and innovation in EMRs. One key to policy success in the EMR field will be distinguishing between raw data (which should be both

25. *Id.* at 21, 22.

26. *Id.* at 23. ("Perversely, license agreements usually bar users of proprietary health IT systems from reporting dangerous bugs to other health care facilities. In open-source systems, users learn from each other's mistakes; in proprietary ones, they're not even allowed to mention them.").

27. Sharona Hoffman, *Employing E-Health: The Impact of Electronic Health Records on the Workplace*, 19 KAN. J.L. & PUB. POL'Y 409, 422 (2010).

28. Longman, *supra* note 24, at 23.

portable and, when properly anonymized, subject to academic research)[29] and its interpretation and organization (which are more justifiably considered the intellectual property of a particular firm).[30] EMR software vendors can exploit a combination of trade secrecy law and licensing agreements to "lock up" data in proprietary formats. If vendors of EMR systems retain excessive control over patient data, many important forms of research may be unduly limited.[31] Scientists are already worried about this trend of closed computation in the modeling of drug trials.[32] For a better sense of the dangers of such a trend, we need only examine its impact in the realm of search engines and credit scoring.

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29. Marc A. Rodwin, *The Case for Public Ownership of Patient Data*, 302 JAMA 86, 88 (2009). For a good discussion of laws regarding anonymization procedures, see Barbara Evans, *Ethical and Privacy Issues in Pharmacogenomic Research, in* PHARMACOGENOMICS: APPLICATIONS TO PATIENT CARE (Howard L. McLeod et al. eds., 2d ed. 2009).

30. For the benefits of such data analysis, see David M. Eddy, *Evidence-Based Medicine: A Unified Approach*, 24 HEALTH AFF. 9, 9-17 (2005); Walter F. Stewart et al., *Bridging the Inferential Gap: The Electronic Health Record and Clinical Evidence*, 26 HEALTH AFF. W181 (2007).

31. *Id.* ("Unfortunately, billions of taxpayers' dollars are about to be poured into expensive, inadequate proprietary software, thanks to a provision in the stimulus package. The bill offers medical facilities as much as $64,000 per physician if they make 'meaningful use' of 'certified' health IT in the next year and a half, and punishes them with cuts to their Medicare reimbursements if they don't do so by 2015. Obviously, doctors and health administrators are under pressure to act soon. But what is the meaning of 'meaningful use'? And who determines which products qualify? These questions are currently the subject of bitter political wrangling. . . . Not only are [the Certification Commission for Healthcare Information Technology's] standards notoriously lax, the group is also largely funded and staffed by the very industry whose products it is supposed to certify. Giving it the authority over the field of health IT is like letting a group controlled by Big Pharma determine which drugs are safe for the market."). Meaningful use standards are now being developed by Health and Human Services, and preliminary indications suggest they may be responding to concerns like those expressed by Longman. *See* Jordan T. Cohen, *CMS and HHS Release New Proposed Rules Governing Health IT – Part 1: Overview of Proposed Rule on "Meaningful Use*," HEALTH REFORM WATCH (Jan. 3, 2010), http://www.healthreformwatch.com/2010/01/03/cms-and-hhs-release-new-proposed-rules-governing-health-it-–-part-1-overview-of-proposed-rule-on-"meaningful-use".

32. Jennifer Kahn, *Modeling Human Drug Trials—Without the Humans*, WIRED, Dec. 2009, at 156, 157, 194 ("In early 2004 . . . the American Diabetes Association asked a physician and mathematician named David Eddy to run his own . . . trial [on atorvastatin]. He would do it, though, without human test subjects, instead using a computer model he had designed called Archimedes. The program was a kind of SimHealth: a vast compendium of medical knowledge drawn from epidemiological data, clinical trials, and physician interviews, which Eddy had laboriously translated into differential equations over the past decade. . . . Eddy's secretive habits are . . . troubling, according to David Nathan, director of the Diabetes Center at Massachusetts General Hospital. 'If you listen to David, he has 10,000 variables and differential equations describing everything from blood sugar to office furniture . . . . But it's never quite clear what they are or how they interact. All the calculations happen inside a black box. And that's a problem because there's no way to tell whether the model's underlying assumptions are right.'").

II. TRADE SECRECY AS A BUSINESS TOOL IN THE SEARCH INDUSTRY

Trade secrecy law has focused on promoting "commercial ethics" in markets. One of its central goals is to avoid wasteful or unfair competition. For example, rather than triple-locking every vault or biometrically assessing the credentials of all who seek access, a trade-secret owner can bind employees, customers, and others not to misappropriate or disclose valuable processes and products. A legal entitlement to trade secrecy cuts down the costs that would be incurred by zealous pursuit of "real secrecy."

Along with these benefits, trade secrecy has many costs.[33] Secrecy can impede incremental innovation, while the patent system's disclosure requirements promote it.[34] A smaller group of scholars has addressed the negative consequences of trade secrecy for society; for example, a firm might prevent health and safety regulators from adequately investigating its practices or products by using trade secrecy protections to deflect investigations.[35] In the digital realm, another set of situations indicates how excess trade secrecy can undermine the public good: namely, the competitions sparked by search engine ranking.[36] Opaque methods of ranking and rating online entities make it difficult for those who feel

33. SUZANNE SCOTCHMER, INNOVATION AND INCENTIVES 81 (2004) ("Unlike all other forms of intellectual property, trade-secret law allows owners to suppress knowledge."). In rare cases, copyright may do the same, given the "secure deposit" exception to copyright's deposit requirement.

34. While widespread disclosure destroys the property value of a trade secret, it is a prerequisite for patent protection. The legitimate reasons for search engines' general emphasis on keeping ranking algorithms confidential throw some light on the divergent rationales for adopting patent or trade secrecy protection for any given instance of intellectual property. While Google's foundational technology in search (the PageRank method) is patented, its continual tweaking of search is usually not. Keeping the search algorithm private is the key to defeating gamers who might propagate link farms or other disfavored methods to gain salience in search results.

35. Levine, *supra* note 9, at 170-77; Mary L. Lyndon, *Information Economics and Chemical Toxicity: Designing Laws to Produce and Use Data*, 87 MICH. L. REV. 1795, 1855-56 (1989).

36. *Viacom Int'l Inc. v. YouTube Inc.*, 253 F.R.D. 256 (S.D.N.Y. 2008); Joe Nocera, *Stuck in Google's Doghouse*, N.Y. TIMES, Sept. 13, 2008, at C1 ("In the summer of 2006 . . . Google pulled the rug out from under [web business owner Dan Savage, who had come to rely on its referrals to his page, Sourcetool]. . . . When Mr. Savage asked Google executives what the problem was, he was told that Sourcetool's 'landing page quality' was low. Google had recently changed the algorithm for choosing advertisements for prominent positions on Google search pages, and Mr. Savage's site had been identified as one that didn't meet the algorithm's new standards. . . . Although the company never told Mr. Savage what, precisely, was wrong with his landing page quality, it offered some suggestions for improvement, including running fewer AdSense ads and manually typing in the addresses and phone numbers of the 600,000 companies in his directory, even though their Web sites were just a click away. At a cost of several hundred thousand dollars, he made some of the changes Google suggested. No improvement.").

(and quite possibly are) wronged to press their case.

Google's secrecy about its website-ranking algorithm has provoked investigations in Europe.[37] The *New York Times* editorial page recently called for similar scrutiny in the U.S.[38] The stakes are high for those who want to be found online. Search engines are referees in the millions of contests for attention that take place on the Web each day. There are dozens of entities that want to be the top result in response to a query such as "sneakers," "best Thai restaurant," or "florist." For consultants, a top or twentieth-ranked result can be the difference between lucrative gigs and obscurity.

It may seem odd to characterize search results as a competition; they are often thought of as a neutral map of the Web. However, the growing "search engine optimization" industry reveals the pressures that individuals and corporations experience as they struggle for salience in results associated with certain queries.[39] The primacy of dominant search engines make them *de facto* sovereigns over important swaths of social life.[40] Both government agencies and public interest groups have begun investigating the possibility that they are acting inconsistently with relevant law or their stated missions.[41] But these challenges and investigations may never end conclusively given the secrecy at the core of the companies' operations.[42]

For example, John Battelle tells the story of the owner of

37. Richard Waters, *Unrest Over Google's Secret Formula*, FIN. TIMES, July 12, 2010, at 22 ("Prompted by three complaints, the European Commission this year began an informal investigation, the first time that regulators have pried into the inner workings of the technology that lies at the heart of Google.").

38. Editorial, *The Google Algorithm*, N.Y. TIMES, July 15, 2010, at A30 ("[T]he potential impact of Google's algorithm on the Internet economy is such that it is worth exploring ways to ensure that the editorial policy guiding Google's tweaks is solely intended to improve the quality of the results and not to help Google's other businesses.").

39. Frank Pasquale, *The Troubling Trend Toward Trade Secrecy in Rankings and Ratings*, *in* THE LAW AND THEORY OF TRADE SECRECY: A HANDBOOK OF CONTEMPORARY RESEARCH (Rochelle C. Dreyfuss & Katherine J. Strandburg, eds., forthcoming 2011).

40. DAVID STARK, THE SENSE OF DISSONANCE: ACCOUNTS OF WORTH IN ECONOMIC LIFE 1 (2009) ("Search is the watchword of the information age. Among the many new information technologies that are reshaping work and daily life, perhaps none are more empowering than the new technologies of search. . . . Whereas the steam engine, the electrical turbine, the internal combustion engine, and the jet engine propelled the industrial economy, search engines power the information economy.").

41. Waters, *supra* note 37.

42. Growing personalization also undermines efforts to understand how the algorithm works. In late 2009, Google changed its algorithms so that even users not signed in to its services would see "personalized results." As customization advances, only the search engineers know who is seeing what results. *See* Frank Pasquale, *The Decline of Media Studies (and Privacy) in a Search Engine Society*, CONCURRING OPINIONS (July 10, 2010, 7:11 PM), http://www.concurringopinions.com/archives/2010/07/the-decline-of-media-studies-and-privacy-in-a-search-engine-society.html.

2bigfeet.com (a seller of large-sized men's shoes), whose site was knocked off the first page of Google's results for terms like "big shoes" by a sudden algorithm shift in November of 2003, right before the Christmas shopping season.[43] Site owner Neil Moncrief attempted to contact Google several times, but said he "never got a response."[44] Google claimed that Moncrief may have hired a search engine optimizer who ran afoul of its rules but it would not say precisely what those rules were.[45] Like the IRS's unwillingness to disclose all of its "audit flags," the company did not want to permit manipulators to gain too great an understanding of how it detected their tactics. Search engine algorithms are enormously complex, and sometimes embody artificial intelligence that even their inventors have a difficult time fully understanding.[46] Such cyberdrift might be even more disturbing than deliberately manipulated results.[47]

Theoretically, plaintiffs could guess at what was being done by search engines in particular cases, and subsequently algorithms could be disclosed only to a court under a protective order.[48]But even in that best-

43. JOHN BATTELLE, THE SEARCH: HOW GOOGLE AND ITS RIVALS REWROTE THE RULES OF BUSINESS AND TRANSFORMED OUR CULTURE 154-59 (2005).

44. *Id*. at 157.

45. *Id.*

46. The difference between explanation and understanding is key here. *See* Georg HENRIK VON WRIGHT, EXPLANATION AND UNDERSTANDING (Cornell paperbacks 2004) (distinguishing natural and human sciences); Chris Anderson, *The End of Theory: The Data Deluge Makes the Scientific Method Obsolete*, WIRED, June 23, 2008, at 108-09 ("At the petabyte scale, information is not a matter of simple three- and four-dimensional taxonomy and order but of dimensionally agnostic statistics. It calls for an entirely different approach, one that requires us to lose the tether of data as something that can be visualized in its totality. It forces us to view data mathematically first and establish a context for it later. . . . Google's founding philosophy is that we don't know why this page is better than that one: If the statistics of incoming links say it is, that's good enough. No semantic or causal analysis is required. That's why Google can translate languages without actually 'knowing' them (given equal corpus data, Google can translate Klingon into Farsi as easily as it can translate French into German).").

47. Jaron Lanier, *One Half of a Manifesto*, EDGE (Sept. 25, 2000), http://www.edge.org/documents/archive/edge74.html ("There is a real chance that . . . the ideology of cybernetic totalist intellectuals will be amplified from novelty into a force that could cause suffering for millions of people."); JARON LANIER, YOU ARE NOT A GADGET 15 (2010) (article expressing concern over situations where "every element in the system–every computer, every person, every bit–comes to depend on relentlessly detailed adherence to a common standard, a common point of exchange.").

48. Protective orders may be issued in the discovery process "for good cause [in] order to protect a party or person from annoyance, embarrassment, oppression, or undue burden or expense." FED. R. CIV. P. 26(c)(1). Rule 26(c)(1)(G) specifies the issuance of a protective order to structure the discovery of trade secrets: orders may be issued "requiring that a trade secret or other confidential research, development, or commercial information not be revealed or be revealed only in a specified way." For a general discussion of trade secrets and protective orders, see 1 MELVIN F. JAGER, TRADE SECRETS LAW § 5:33 (updated in Sept. 2008).

case scenario, it is hard to imagine a court with the institutional competence to understand whether a given set of results has been manipulated. A more systematic institutional response is needed here—perhaps a trusted advisory committee within the Federal Trade Commission could help courts and agencies adjudicate coming controversies over search engine practices.[49] Qualified transparency here would promote the development of what Christopher Kelty calls a "recursive public"—one that is "vitally concerned with the material and practical maintenance and modification of the technical, legal, practical, and conceptual means of its own existence as a public."[50]

Neither markets nor common law are likely to hold search engines accountable under present circumstances. Oftentimes these intermediaries operate at the hub of multi-sided markets. For example, in a given situation where a Google user is searching for flowers nearby, Google's search engine might block one florist for what it deems illicit "search engine manipulation" (as defined by a trade-secret-protected algorithm), but still deliver several relevant results. The searcher is unlikely ever to know of the blockage, and advertisers that benefit from increased patronage may be pleased by it. Though early search engine prototypes that rested entirely on paid ads were quickly routed by more objective sources of information, few are likely to detect or mind subtle manipulation now. Given the trend toward dynamically personalized search results, it is hard to imagine how monitoring could effectively detect untoward conduct here. The blocked florist could detect that it was blocked on its own computer, but would be unlikely to access a large enough sample of search results to prove unfair treatment.[51]

Reputations are created or destroyed, highlighted or obscured, by search engines. Traditional restrictions on data and information flows—be they in the form of privacy or intellectual property laws—inadequately constrain these important intermediaries. In considering the balance of power between search engines and those whom their actions affect, scholars have focused on either strengthening or weakening extant doctrines of copyright, trademark, contract, antitrust, and privacy law.

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49. *See Beyond Innovation and Competition*, *supra* note 13, at 160 (proposing public and private institutions for promoting qualified transparency to enhance accountability while protecting intellectual property).

50. CHRISTOPHER M. KELTY, TWO BITS: THE CULTURAL SIGNIFICANCE OF FREE SOFTWARE 3 (2008).

51. As customization advances, only the search engineers know who is seeing what results. *See* Pasquale, *supra* note 42; *but see* Benjamin Edelman, *Hard-Coding Bias in Google "Algorithmic" Search Results* (Nov. 15, 2010), http://www.benedelman.org/hardcoding (making a case that "Google's use of hard-coding and other adjustments to search results gives Google an important advantage in any sector that requires or benefits from substantial algorithmic search traffic," by analyzing various Web results).

However, a critical mass of doctrine in these fields (along with established patterns of consumer behavior and the advent of cloud computing) has freed up so much information that the law needs to be concerned not only with information aggregation, but also with rankings and evaluations that flow from it. We should be troubled when trade secrecy obscures the basis of these rankings.

III. CLANDESTINELY COMMENSURATING COMPUTING IN CONSUMER CREDIT SCORING

New York Times business reporter Joe Nocera recently noted that while a "credit score is derived after an information-gathering process that is anything but rigorous," it "has become the only thing that matters anymore to the banks and other institutions that underwrite mortgages."[52] Credit bureaus have also engaged in secret ranking and scoring practices that jeopardize individual reputations.[53] They routinely convert information into a single score purporting to assess the creditworthiness of applicants for loans. Though a credit score is computed via proprietary algorithms protected as trade secrets, it is widely treated as a fair and objective evaluation of an individual's creditworthiness.[54] Revelation of such secrets can amount to a "taking," requiring government compensation for disclosure mandated by regulators.[55]

After the subprime debacle, the social importance of credit scoring

52. Joe Nocera, *Credit Score is the Tyrant in Lending*, N.Y. TIMES, July 24, 2010, at B1.

53. Martha Poon, *From New Deal Institutions to Capital Markets: Commercial Consumer Risk Scores and the Making of Subprime Mortgage Finance*, 34 ACCT., ORG., & SOC'Y 654, 658 (2009) ("The strength of the bureau scores as risk management aids is that they give competitive lending firms equal access to general snapshots of the consumer that are continuously recalculated as new data is amassed from participating lenders. Such scores are by no means produced from an 'ideal' data set. They are parasitic and pragmatic constructions that make the most of information that is readily available at the bureaus as a resource for manufacturing pre-packaged analytic products. These black-boxed statistical figures are in large part 'behavioural scores'. They do not seek to qualify static qualities of the person so much as they constitute a temporally responsive picture of consumer risk that is useful for tracking a person's ongoing relationship to credit.").

54. Liz Pulliam Weston, *Eight Secret Scores That Lenders Keep*, MSN MONEY, http://articles.moneycentral.msn.com/Banking/YourCreditRating/8SecretCreditScoresThatLendersKeep.aspx?page=all (last updated Mar. 17, 2009) (describing "complex and largely secret scoring systems").

55. Mandated disclosure destroys a trade secret, which can trigger obligations for compensation. Robert K. Hur, *Takings, Trade Secrets, and Tobacco: Mountain or Molehill?*, 53 STAN. L. REV. 447, 489 (2000) ("[T]he common law's definition of trade secrets supports, and the [Supreme] Court expressly approved, the intuitively appealing picture of a trade secret's destruction being a per se taking, regardless of the economic impact on the underlying knowledge.").

(and its use by predatory lenders) has become more obvious than ever.[56] Nevertheless, the industry remains highly opaque, with scored individuals unable to determine the consequences of late payments, changes in location, or other decisions.[57] At least one report has alleged that credit scoring has negative, disparate impacts on minorities and low income neighborhoods.[58] Use of credit scores has been regulated by forty-eight states.[59] The National Fair Housing Alliance has criticized them for possibly "disadvantag[ing] protected classes," arguing that the "[i]ndustry's [l]ack of [t]ransparency [c]reates [f]air [h]ousing [c]oncerns."[60]

The scores themselves may be self-fulfilling prophecies, creating the financial distress they claim merely to indicate.[61] An individual's financial situation should determine the score, but the causation may be the reverse: the very act of designating certain persons or institutions likely failures increases the likelihood of failure. If a scorer determines that one missed $10 payment for a woman with two children earning $30,000 per year lowers her credit score by 200 points, she will be more likely to default because her low score means that she will be paying much more in interest for any financing she can obtain. Since the scores are black boxes, we have no assurance that scorers try to eliminate such

56. Poon, *supra* note 53, at 654 ("[O]nce modified by specific GSE interpretations the calculative properties generated by these credit bureau scores reconfigured mortgage finance into two parts: the conventional, risk-adverse, GSE conforming 'prime' and an infrastructurally distinct, risk-avaricious, investment grade 'subprime.'").

57. FRANK M. FITZGERALD, OFFICE OF FIN. & INS. SERV., THE USE OF INSURANCE CREDIT SCORING IN AUTOMOBILE AND HOME OWNERS INSURANCE 24 (2002) (discussing the "lack of adequate, detailed information that is made readily available to consumers that allows them to determine if their insurance credit score and resulting insurance premium is accurate").

58. BIRNY BIRNBAUM, INSURER'S USE OF CREDIT SCORING FOR HOMEOWNER'S INSURANCE IN OHIO: A REPORT TO THE OHIO CIVIL RIGHTS COMMISSION 2 (2003) ("Based upon all the available information, it is our opinion that insurers' use of insurance credit scoring for underwriting, rating, marketing and/or payment plan eligibility very likely has a disparate impact on poor and minority populations in Ohio.").

59. NAMIC ONLINE, NAMIC'S STATE LAWS AND LEGISLATIVE TRENDS: STATE LAWS GOVERNING INSURANCE SCORING PRACTICES (2004), http://www.namic.org/reports/credithistory/credithistory.asp.; *see, e.g.*, HAW. REV. STAT. ANN. § 431:10C-207 (West 2010) ("No insurer shall base any standard or rating plan, in whole or in part, directly or indirectly, upon a person's race, creed, ethnic extraction, age, sex, length of driving experience, credit bureau rating, marital status, or physical handicap.").

60. *Future of Housing Finance: The Role of Private Mortgage Insurance Before the Subcomm. on Capital Markets, Insurance and Government Sponsored Enterprises of the H. Comm. on Fin. Servs.*, 111th Cong. 6 (2010) (testimony of Deborah Goldberg); *see also* BIRNBAUM, *supra* note 58, at 2 ("data and information strongly suggest insurers' use of credit has a disparate impact on poor and minority populations").

61. Robert Berner & Chad Terhune, *Linking Credit Scores to Hospital Care*, BUSINESSWEEK, Dec. 1, 2008, at 80.

endogenicity, or whether they profit from such self-fulfilling prophecies.

IV. FROM ENRON TO AIG: A DECADE OF UNREPRODUCIBLE FINANCIAL RESULTS

While ordinary consumers are vulnerable to unaccountable x-rays of their financial status, those at the top of the finance sector have used opaque instruments to obscure the real bases of profits and bonuses. Margaret Atwood's one-sentence description of the origins of the subprime crisis highlights how opaque financial instruments created unknown risks for investors and governments. In her Massey Lectures, the Canadian novelist wrote that "[This] scheme . . . boils down to the fact that some large financial institutions peddled mortgages to people who could not possibly pay the monthly rates and then put this snake-oil debt into cardboard boxes with impressive labels on them and sold them to institutions and hedge funds that thought they were worth something."[62] As similar black boxes, ranging from off-balance-sheet "special purpose vehicles" to "over the counter" derivatives, continue to imperil the global economy, there will be increasing pressure for the financial industry to adopt more principles of openness.

Murky relationships between leading bankers and regulators tend to shield important transactions—and implicit governmental backing of them—from public scrutiny.[63] Banks that are "too big to fail" tend to engage in transactions that are too sensitive to disclose. They also amass the political leverage necessary to deflect demands for openness from regulators and journalists.[64]

Many Washington regulators are swamped by information; for example, "A Senate study in 2002 found that the SEC had managed to fully review just 16 percent of the nearly 15,000 annual reports that

62. MARGARET ATWOOD, PAYBACK: DEBT AND THE SHADOW SIDE OF WEALTH 8 (2008).

63. *See*, *e.g.*, Complaint for Declaratory & Injunctive Relief at 1, Bloomberg L.P. v. Bd. of Governors of the Fed. Reserve Sys., 649 F. Supp. 2d 262 (S.D.N.Y. 2009) (No. 08 Civ. 9595) (alleging that key Fed programs "make [no] reference to any public disclosure of the posted collateral or of the Fed's methods in valuing it" with respect to key lending programs); *see* Greg Kaufmann, *Friedmanism at the Fed*, THE NATION, Mar. 15, 2010, at 18, 20 ("Despite demands from Congress and the media, neither the Fed nor AIG disclosed the names of the banks or the amount of money each had received through the bailout until March 15, 2009, when AIG finally did so.").

64. Kevin Drum, *Capital City*, MOTHER JONES, Jan./Feb. 2010, *available at* http://motherjones.com/print/31351 (during the 2008 election cycle, "The defense lobby . . . contributed $24 million to individuals and PACs . . . . The farm lobby? [It contributed] $65 million. Health care [firms contributed] . . . $167 million. And the finance lobby? They're No. 1, . . . [having] contributed an astonishing $475 million during the 2008 election cycle."). Drum concludes that "the finance lobby is, still, simply too big to fight." *Id.*

companies submitted in the previous fiscal year; the recently disgraced Enron hadn't been reviewed in a decade."[65] Daniel Roth claims that better access to financial information would give "everyone the tools to track, analyze, and publicize financial machinations."[66] As part of such a data infrastructure, Professors Viral Acharya and Robert Engle argue that "[d]erivative [t]rades [s]hould [a]ll [b]e [t]ransparent."[67] Acharya and Engle criticized derivatives regulation for not going far enough to address these issues. The Dodd-Frank Act also fails to provide for adequate disclosure of OTC derivatives.[68]

Secrecy is a troubling linchpin of contemporary finance capital, even though the size and interconnectedness of large financial institutions has increased the fragility of the credit system as a whole. Information about important transactions should be available to regulators instantly.[69] The larger a financial institution is, the more information it should be required to share about its business practices, and the faster it should be required to disclose them.[70] Real-time reporting of all transactions to

65. Daniel Roth, *Road Map for Financial Recovery: Radical Transparency Now!,* WIRED, Mar. 2009, at 80, 82.

66. *Id*. at 83.

67. Viral V. Acharya & Robert Engle, *Derivatives Trades Should All Be Transparent,* WALL ST. J., May 15, 2009, at A13 ("Most financial contracts are arrangements between two parties to deliver goods or cash in amounts and at times that depend upon uncertain future events. By their nature, they entail risk, but one kind of risk — 'counterparty risk' — can be difficult to evaluate, because the information needed to evaluate it is generally not public. Put simply, a party to a financial contract might sign a second, similar financial contract with someone else — increasing the risk that it may be unable to meet its obligations on the first contract. So the actual risk on one deal depends on what other deals are being done. But in over-the-counter (OTC) markets — in which parties trade privately with each other rather than through a centralized exchange — it is not at all transparent what other deals are being done. This makes it likely that some institutions will build up excessively large positions in OTC derivatives without the full knowledge of other market participants. If these institutions were to default, their counterparties would also incur significant losses, creating a systemic risk.").

68. Wallace C. Turberville, *Derivatives Clearing: At the End of the Beginning*, NEW DEAL 2.0 (Aug. 23, 2010, 10:57 AM), http://www.newdeal20.org/2010/08/23/derivatives-clearing-at-the-end-of-the-beginning-18210.

69. Real Time Public Reporting of Swap Transaction and Pricing Data, 75 Fed Reg. 76,140, 76,930 (proposed Dec. 7, 2010) (to be codified at 17 C.F.R. pt. 43) ("The Commodity Futures Trading Commission ('Commission') is proposing rules to require public reporting of certain swap transaction pricing and volume data and to establish a procedure for determining appropriate minimum sizes for block trades and large notional swap transactions.").

70. The new Office of Financial Research should promote these goals. For background on the office, see JENNIFER S. TAUB, GREAT EXPECTATIONS FOR THE OFFICE OF FINANCIAL RESEARCH 1 ("The Office of Financial Research ("OFR") is a rarely-discussed but potentially powerful agency established by the Wall Street Reform and Consumer Protection Act of 2010 ("Dodd-Frank"). Often compared to a storm-warning system, the OFR, through its two units, a Data Center and a Research and Analysis Center, can continually gather up and analyze detailed financial information collected from a variety of banks and other financial firms.").

some limited group of federal officials may well be required.[71] A systemic risk regulator needs a complete and current picture of the overall level of debt, wealth, and risk in an economy.[72]

Though the rise of the "shadow banking system" and "dark pools" may make its spread inevitable, trade secrecy appears inappropriate when a Gordian knot of gambles can put the entire global financial system at risk. As Stephen Mihm has noted, "a web of extraordinarily complex securities and wagers that has made the world's financial system so opaque and entangled that even many experts confess that they no longer understand how it works."[73] Some systemic risk regulator should be given critical information in real time.[74] Transparency would also help global regulators clamp down on the trillion dollars of funds lost each year to tax authorities in the developing world due to illicit financial flows.[75]

CONCLUSION

Many current public policy battles concern the balance between

71. For a fuller exploration of "qualified transparency" in another regulatory context, see *Beyond Innovation and Competition, supra* note 13. The Securities and Exchange Commission has begun a program of intensified market surveillance. Press Release, Sec. and Exch. Comm'n, SEC Proposes Consolidated Audit Trail System to Better Track Market Trades (May 26, 2010) *available at* http://www.sec.gov/news/press/2010/2010-86.htm (Proposing a rule to "establish a consolidated audit trail system that would enable regulators to track information related to trading orders received and executed across the securities markets.").

72. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, §§ 111-123. (2010) (establishing a Financial Stability Oversight Council ("FSOC"), a ten member board chaired by the Secretary of the Treasury and composed mainly of the heads of federal economic agencies). The FSOC's purpose is "to identify risks to the financial stability of the United States that could arise from the material financial distress or failure" or large bank and non-bank financial companies. *Id.* § 112(a)(1)(A)*; see also* SKADDEN, ARPS, SLATE, MEAGHER & FLOM LLP & AFFILIATES, THE DODD-FRANK ACT: COMMENTARY AND INSIGHTS 21 (2010).

73. Stephen Mihm, *The Black Box Economy*, BOSTON GLOBE, Jan. 27, 2008, at E1 (describing an "immense shadow economy of novel and poorly understood financial instruments created by hedge funds and investment banks over the past decade" as "a deep[] change in the financial system that may leave regulators, and even Congress, powerless when they try to wield their usual tools" to address economic crisis.).

74. Mike Masnick, *Garbage In … Radical Transparency Out?*, TECHDIRT (Feb. 24, 2009, 02:34 PM), http://www.techdirt.com/articles/20090224/0023453876.shtml (asking "how the various quants on Wall Street got so suckered into believing their risk models that didn't take into account the idea that mortgage defaults weren't necessarily independent events," and concluding that "[e]ven if people know that a computer model is 'just a model,' it leads to situations where they just rely on the computer because the computer said so – not taking into account its obvious faults").

75. RAYMOND BAKER, CAPITALISM'S ACHILLES HEEL: DIRTY MONEY AND HOW TO RENEW THE FREE MARKET SYSTEM 23-24 (2005); *see also* Hilaire Avril, *Political Elites Ensure Continuing Flight of Dirty Money*, IPS (Sept. 16, 2009), http://www.ipsnews.net/africa/nota.asp?idnews=48460 (describing a definitive study of "illicit financial flows from developing countries [estimated at] a trillion dollars a year").

secrecy and disclosure at large corporations. The financial crisis has turned public attention to the undisclosed risks on the balance books of the largest banks and the confidential Federal Reserve interventions that kept the banking system afloat during the crisis of 2008. Secret and unfair pricing practices by hospitals and insurers pose a major challenge for the implementation of health care reform. Key intermediaries in the financial, health, and information sectors play a role in today's economy akin to that of the great trusts which originally inspired the Sherman and Clayton Acts, making or breaking the economic fates of many individuals. As novelist Adam Haslett put it, they are the "master[s] of conditions others merely suffer[]."[76]

Consultants frequently tell academics that they are obliged to become more "corporate" in outlook—to pay more attention to the bottom line and to develop more proprietary products and services.[77] These pressures are particularly intense in fields with immediate commercial relevance. However, certain principles of openness derived from traditional science and academic life might end up serving the long-term economic interests of American industries.[78] While the university can learn from the for-profit corporation, governments regulating intermediaries should also learn from the openness principles of universities. For example, Victoria Stodden has argued that, in the case of computational scientific research, "results should be independently replicable," otherwise, science cannot progress.[79] Similarly, sequential innovation in the private sector relies on later "improvers" being able to stand on the shoulders of earlier innovators.[80] Trade secrecy threatens to

76. ADAM HASLETT, UNION ATLANTIC 162 (2010).

77. JAMES C. GARLAND, SAVING ALMA MATER: A RESCUE PLAN FOR AMERICA'S PUBLIC UNIVERSITIES 199-200 (2009) (claiming that universities need to become more efficient and should be "deregulated," with revenues tied to "performance"); GAYE TUCHMAN, WANNABE U: INSIDE THE CORPORATE UNIVERSITY (2009) (observing and critiquing trends toward academic corporatization).

78. *See*, *e.g.*, Victoria Stodden, *Enabling Reproducible Research: Licensing for Scientific Innovation*, INT'L J. COMM. L. & POL'Y 2, 2 (2009) ("[P]revailing scientific norms . . . provide both that results be replicated before accepted as knowledge, and that scientific understanding be built upon previous discoveries for which authorship recognition is given."). Patent law's disclosure requirement reflects such scientific standards; trade secrecy dispenses with them. *See also* Victoria Stodden et al., *Reproducible Research*, 12 COMPUTING SCI. & ENGINEERING 8, 8 (2010) (I was a contributing author for this proposal.).

79. Stodden, *supra* note 78, at 8. As she notes in the article, the OECD's Istanbul Declaration "call[ed] for governments to make their data freely available online as a 'public good.'" *Id.* Given extensive government support for the finance and health care industries, it is appropriate for public authorities to impose openness requirements on firms in many situations as a condition for future support.

80. SCOTCHMER, *supra* note 33, at 156 ("When innovation is cumulative, an important incentive problem is to ensure that each innovator is rewarded enough to take account of the benefits conferred on future innovators. The future innovators may, in fact, be the original

nip that process in the bud, siloing innovation in search, health care, and finance into the firms best able to create authoritative data stores. There is no necessary relationship between being the best data-gatherer and finding the best interpretations and applications of that data.

Globalization accelerates competition and stratification within and among economies. A power law distribution of cultural, political, and economic inequality can only be legitimated by democracy, markets, or some combination of the two.[81] Such forms of spontaneous coordination are perceived as fair because they are governed by knowable rules: a majority or plurality of votes wins, as does the highest bidder. Yet our markets, research, and life online are increasingly mediated by institutions that suffer serious transparency deficits. When a private entity grows important enough, it should be subject to transparency requirements that reflect its centrality.[82] The increasing intertwining of governmental, business, and academic entities should provide some leverage for public-spirited appropriators and policymakers to insist on more general openness.[83]

Laws promoting transparency have shed some light on troubling practices. However, new automated authorities are often so complex that merely revealing them will not solve the problems discussed above. Transparency should be a first step toward an *intelligible* society, where leading firms' critical decisions can be understood not merely by their own engineers and mathematicians, but also by risk managers and regulators. However well an "invisible hand" coordinates economic activity generally, markets depend on reliable information about the practices of core firms that finance, rank, and rate entities in the rest of the economy. Brandishing quasi-governmental authority to determine which enterprises are funded and found, they need to be held to a higher standard than the average firm.

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innovator's rivals.").

81. For a leading attempt to provide such a justification, see YOCHAI BENKLER, THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM (2006). For a critique of Benkler's optimism here, see Oren Bracha & Frank Pasquale, *Federal Search Commission? Access, Fairness, and Accountability in the Law of Search*, 93 CORNELL L. REV. 1149 (2008).

82. The Freedom of Information Act only applies to the government, but given private companies' increasingly governmental role in today's society, it is time to consider applying some of its strictures to key private sector entities. *See, e.g.,* Levine, *supra* note 9; ALASDAIR ROBERTS, BLACKED OUT: GOVERNMENT SECRECY IN THE INFORMATION AGE 158 (2006) (discussing interaction of privatization and FOIA); Craig D. Feiser, *Privatization and the Freedom of Information Act: An Analysis of Public Access to Private Entities Under Federal Law*, 52 FED. COMM. L.J. 21 (1999).

83. *See*, *e.g.*, Samuel E. Trosow, *Copyright Protection for Federally Funded Research: Necessary Incentive or Double Subsidy?*, 22 CARDOZO ARTS & ENT. L.J. 613 (2004) (discussing the importance of leveraging federal subsidies to encourage openness).

REMARKS AT THE DIGITAL BROADBAND MIGRATION: EXAMINING THE INTERNET'S ECOSYSTEM

LAWRENCE E. STRICKLING*

I want to thank Dale Hatfield, Phil Weiser, and Silicon Flatirons for the opportunity to speak at this year's conference. As I talked with Dale and Phil about the topic for my remarks today, I thought I would be a one-person reaction panel, highlighting some of my key takeaways from the conference and talking about how the agenda at NTIA this year might address some of these issues. I knew even before the conference began that speaking here was going to be a daunting task, but nonetheless, I do have some observations about the conference, and hopefully some broader thoughts to leave you with as we end this year's conference. None of this is fully baked, but hopefully you will at least find it to be worth chewing over.

My first observation: I think it is really misleading to call the Internet an ecosystem.[1] So, even though I have signed papers that refer to the Internet ecosystem, I'm changing my mind about that.[2] Yes, there are a lot of complex interrelationships as we would see in any natural ecosystem.[3] But, here's the big difference for me: I associate the dynamics

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1. *See* Lawrence E. Strickling, Assistant Sec'y of Commerce for Commc'ns and Info., Remarks at The Media Institute: The Internet: Evolving Responsibility for Preserving a First Amendment Miracle, (Feb. 24, 2010), *available at* http://www.ntia.doc.gov/presentations/2010/MediaInstitute_02242010.html.

2. *See, e.g.*, Letter from Lawrence E. Strickling, Assistant Sec'y of Commerce for Commc'ns and Info., to Julius Genachowski, Chairman, Fed. Commc'n Comm'n, National Broadband Plan, GN Doc. No. 09-51, Jan. 4, 2010, *available at* http://www.ntia.doc.gov/filings/2009/FCCLetter_Docket09-51_20100104.pdf.

3. *See* LA.-MISS. GULF COAST ECOSYSTEM RESTORATION WORKING GRP., EXEC.

of a natural ecosystem with two important concepts. First, the presence of some set of biological laws—some known to us, such as natural selection; others, perhaps not so apparent—that, second, lead to a balance or some sort of equilibrium state. Even when we have disturbances in these natural ecosystems, like a devastating fire or the introduction of some foreign invasive species, these natural operations and laws kick in and bring that ecosystem back to some equilibrium state.[4] Maybe the new equilibrium is different from what there was before, but there is always a sense that you are moving towards a balance or an equilibrium.[5]

I think applying that concept to the Internet leads us to perhaps accept the idea that the Internet is really self-regulating in the same way. That there is some natural order that will always emerge no matter how the system might be disturbed, and that policymakers should just leave the Internet alone.[6] I suggest that unless some of you share the view that my colleague, Danny Weitzner, raised for the sake of argument earlier at this conference—that there is really no societal value to protecting the Internet in its current state, or in any particular state—that this idea to leave the Internet alone is just simply wrong.[7] And I would suggest to you that none of you believe it anyway.

We are not talking about the Internet as some national park or wilderness area that we are just going to set aside and let evolve on its own. It is not a forest of computer servers with mountain ranges of content just waiting to be protected.[8] In fact, I'm going to stop with these analogies to nature because I just don't think they're helpful any longer.

And that brings me to my second point. When we talk about Internet governance, we should really look at the Internet as an agglomeration of human actors.[9] It is a large and growing social

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OFFICE OF THE PRESIDENT, ROADMAP FOR RESTORING ECOSYSTEM RESILIENCY AND SUSTAINABILITY (Mar. 2010), *available at* http://www.whitehouse.gov/sites/default/files/microsites/ceq/100303-gulf-coast-roadmap.pdf.

4. *See* John Tschirhart, *General Equilibrium of an Ecosystem*, 203 J. OF THEORETICAL BIOLOGY 13 (2000).

5. *Id.*

6. *See* Philip J. Weiser, *The Future of Internet Regulation,* 43 U.C. DAVIS L. REV. 529, 542 (2009).

7. *Id.* at 531 (suggesting that government oversight of the Internet will ensure that the social and economic benefits of the Internet will not be impaired by disputes between private actors).

8. *See* B.G., *The Internet is not an Ecosystem,* ECONOMIST: BABBAGE, (Apr. 12, 2010, 18:21), http://www.economist.com/blogs/babbage/2010/04/verizon_and_its_new_metaphor. *But see* INTERNET SOC'Y, INTERNET ECOSYSTEM (2009), *available at* http://www.itu.int/osg/csd/wtpf/wtpf2009/ieg/january-meeting/bg/isoc-factsheet-internet-ecosystem.pdf.

9. Weiser, *supra* note 6, at 539; *see also* Susan P. Crawford, *The Internet and the Project of*

organization. There are no natural laws to guide it. And there most certainly is no natural equilibrium or balance point because the human actors that are participating in this organization all are demanding that laws or rules be created to govern all these relationships.[10] And we individually are always trying to twist these laws or rules to our advantage; that's just human nature.[11]

So let's not kid ourselves. Based on what I have heard in the last day-and-a-half, I think that I can state with high confidence that every interest group or industry segment in this room today, and here this weekend, wants a rule that protects its prerogatives. If you are a content owner, you want to be allowed to take action with ISP's against copyright infringers. If you are a small backbone provider, you want rules to govern Internet peering arrangements. If you are a user, you want net neutrality. And even the network owners, while they may be against the specifics of net neutrality, the fact is that the absence of net neutrality does not mean there's a void; it just means that the network owners get to make their own rules about whether and when to discriminate.[12] So there's still a regime, it's just not one that has been developed and is regulated by the government directly.[13]

All of this leads me to my third point, which is that given all of the human actors involved in the Internet, with all of their competing interests, governments have to be involved at some level, to help sort out these interests. Now, I am one who would subscribe to the view that this involvement does not have to necessarily be the existing regulatory schemes, many of which people characterize as heavy-handed. And I certainly agree with comments made yesterday that the existing structures are too slow, too inaccurate, and just not properly equipped to deal with all these issues. But there is a huge risk that in the absence of some level of oversight we are going to lose the one thing that the Internet must have—not just to thrive, but to survive—and that is the trust of all of the actors on the Net.[14] We know if users can't trust the

Communications Law, 55 UCLA L. REV. 359, 360 (2007) ("The Internet's value to people does not come from the nature of the connections we use to access it but, rather, from the human communications and relationships made possible by its universal interconnectivity and flexibility.").

10. Weiser, *supra* note 6, at 538 (suggesting that the welfare of all Internet stakeholders depends on oversight to "assure all parties the opportunity to deal fairly with one another and build trust that a stable equilibrium will continue").

11. *Id.* at 540-41.

12. *See* KALEB SIEH, SILICON FLATIRONS, THE 2010 DIGITAL BROADBAND MIGRATION: EXAMINING THE INTERNET'S ECOSYSTEM (2010).

13. *See* Weiser, *supra* note 6, at 542 (explaining that in the early days of the Internet, social norms that developed were enforced by private actors without government oversight).

14. *See, e.g.*, ORG. FOR ECON. CO-OPERATION AND DEV., SHAPING POLICIES FOR THE FUTURE OF THE INTERNET ECONOMY 22 (2008) (affirming that in light of the importance of the Internet to the global economy, building and maintaining trust in the

Net—that their information will be protected, that they are being sent to the website that they want to be sent to—they are not going to use it.[15] We know from the content providers that if their content is not being protected on the Internet, they will threaten to stop using it.[16] We know that if foreign governments do not trust the Internet governance mechanism, they may threaten to balkanize the domain name system, which will potentially jeopardize the worldwide reach of the Internet.[17] So, this issue of trust applies to every actor on the Internet.[18]

Policymakers need to think about how to define their role and what their ultimate goal ought to be: to really focus on preserving and maintaining trust in the Internet. Unfortunately, it is easier for government agencies—particularly regulatory agencies—to organize to prevent bad conduct, as opposed to nurture good conduct. So, we have the Department of Justice Antitrust Division, but we do not have the equivalent agency that's charged with being *for* trust or building trust. At NTIA, we are not a regulatory agency, but we think we have a role to play to help build and preserve this trust. And our agenda for this year is designed to refocus NTIA on Internet and information policy.[19] There's an "I" in our name—remember, it's NTIA—but people have always viewed our agency as more involved with the "T" piece, not the "I" part. But let me just go over some of our initiatives for the year.

Here are some of the questions that we will be addressing:

Privacy Policy

How can we enable the development of innovative new services and applications that will make intensive use of personal information while at the same time ensuring that users are protected from harm and unwanted

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Internet and related information and communications technology networks must be a key policy area) [*hereinafter* SHAPING POLICIES].

15. *Id.* at 26.

16. *See* WORKING GRP. ON INTELLECTUAL PROP. RIGHTS, INFO. INFRASTRUCTURE TASK FORCE, INTELLECTUAL PROPERTY AND THE NATIONAL INFORMATION INFRASTRUCTURE 10 (1995) (highlighting the increased risk of piracy in the online environment, which may discourage authors from making their works available through this market mechanism).

17. *See, e.g.*, *The Future of the Internet: A Virtual Counter-Revolution,* ECONOMIST, Sept. 2, 2010, at 10; *see also*, COMM. ON INTERNET NAVIGATION AND THE DOMAIN NAME SYS.: TECHNICAL ALTS. AND POLICY IMPLICATIONS & NAT'L RESEARCH COUNCIL, SIGNPOSTS IN CYBERSPACE: THE DOMAIN NAME SYSTEM AND INTERNET NAVIGATION 173 (2005) (recommending that coordination on internationalized domain name "across different countries, regions, and language groups should be undertaken to prevent the balkanization of the Internet").

18. SHAPING POLICIES, *supra* note 14.

19. *See* Strickling, *supra* note 2; *see also* Strickling, *infra* note 27.

intrusion into their privacy? Do you see a trust component there? Yes, absolutely.

Child Protection and Freedom of Expression

As more and more children go online for educational and social activities, their protection is vital. So how do we ensure proper targeting of law enforcement resources to address serious crime while remembering that the most important line of defense against harmful content is the well-informed and engaged parent or teacher?[20] Again, parents need to trust the Internet. They need to know that their children will be protected online.

Cybersecurity

Clearly, this is an issue of trust. How do we meet the security challenges posed by the global Internet, which will require increased law enforcement efforts and private sector technology innovation, yet respect citizen privacy and the protection of our civil liberties?[21]

Copyright Protection and Piracy

How do we protect against the illegal piracy of copyrighted works and intellectual property on the Internet while still preserving the rights of users to access all lawful content across the Internet?[22]

Internet Governance

In our role administering the federal government's relationships with ICANN,[23] how do we ensure that ICANN serves the public interest and conducts its activities with the openness and transparency

20. *See* ONLINE SAFETY AND TECH. WORKING GRP., YOUTH SAFETY ON A LIVING INTERNET (2010). The Working Group and its report, transmitted to NTIA and the Congress, was mandated by the Broadband Data Improvement Act, Pub. L. No. 110–385, § 214, 122 Stat. 4096 (2008) (codified at 15 U.S.C. § 6554), with recommendations to advance the goal of providing a safe online experience for children.

21. Cybersecurity, Innovation and the Internet Economy, *Notice of Inquiry*, Dkt. No. 100721305-0305-01, 2010 WL 2917751 (July 28, 2010).

22. Inquiry on Copyright Policy, Creativity, and Innovation in the Internet Economy, *Notice of Inquiry*, Dkt. No. 100910448-0448-01, 2010 WL 3843096 (Oct. 5, 2010).

23. ICANN is the Internet Corporation for Assigned Names and Numbers, a non-profit organization that coordinates, at the overall level, the global Internet's systems of unique identifiers, and in particular to ensure the stable and secure operation of the Internet's unique identifier systems. *See Bylaws for Internet Corporation for Assigned Names and Numbers*, ICANN, http://icann.org/en/general/bylaws.htm#I (last updated Oct. 28, 2010).

that the global Internet community demands?[24] Early last fall, we executed the new Affirmation of Commitments to establish what we hope will be a long-lasting framework for the technical coordination of the Internet naming and numbering system.[25] And we are looking forward this year to participating in the first of the administrative reviews called for in that document to ensure that the commitments agreed to by ICANN are carried out in full.[26] So again, there's a trust issue.

All of the efforts require collaboration among all stakeholders. We are going to involve other government agencies, foreign governments, where appropriate, and all key Internet constituencies—the commercial sector, academia, and civil society. Again, our objective is to move in the direction of building trust. In terms of the outcomes, we will be flexible. (And I was prepared to use that word even before I heard this morning's discussion of the importance of flexibility in governance.) Some of these efforts may result in recommendations for legislation or regulation, but if this work paves the way for individual actors to adopt new processes, so much the better.[27]

What I am describing here is not a governance model, although maybe some of the academics in here can pull something more out of it. I am not even sure it is a model of any kind. But, I think it clearly is what Marc Berejka referred to as a "nudge." It's an opportunity for us in the government to bring people together to work on these issues and try to come up with solutions that we think will solve these problems.[28] And, again, maintain trust. At the end of the day, all of these initiatives have as their goal to preserve and protect the trustworthiness of the Internet.

So, if we are successful, maybe we will change our name to the "National Trust the Internet Administration." That's what we are all

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24. *See* Lawrence E. Strickling, Assistant Sec'y of Commerce for Commc'ns and Info., Remarks at Inaugural Meeting of the United States Internet Governance Forum: Current Issues Affected by Internet Governance (Oct. 2, 2009), *available at* http://www.ntia.doc.gov/speeches/2009/Strickling_USIGF_091002.html.

25. *See* NAT'L TELECOMMS. AND INFO. ADMIN., AFFIRMATION OF COMMITMENTS BY THE UNITED STATES DEPARTMENT OF COMMERCE AND THE INTERNET CORPORATION FOR ASSIGNED NAMES AND NUMBERS (2009); *see also* Strickling, *supra* note 24.

26. *See Affirmation of Commitments—Reviews*, INTERNET CORP. FOR ASSIGNED NAMES AND NOS. (July 26, 2010), http://www.icann.org/en/reviews/affirmation/.

27. *See* Lawrence E. Strickling, Assistant Sec'y of Commerce for Commc'ns and Info., Remarks at The Internet Society's INET Series: Internet 2020: The Next Billion Users: Internet Policy 3.0: All Hands on Deck (Apr. 29, 2010), *available at* http://www.ntia.doc.gov/presentations/2010/InternetSociety_04292010.html (calling for the need to take advantage of the successful multistakeholder organizational models to address current Internet challenges, and to avoid reducing the debate to one of whether or not to regulate).

28. *Id.*; *see also* RICHARD H. THALER & CASS R. SUNSTEIN, NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS (2008).

about this year, and that's my take away from this conference. We have got a lot of work to do, at least in our organization, but I think we can make a contribution here.

UNFRIENDED FELONS: REEVALUATING THE INTERNET'S ROLE FOR THE PURPOSE OF SPECIAL CONDITIONS IN SENTENCING IN A POST-FACEBOOK WORLD

Jake Adkins*

INTRODUCTION

Since its inception, the Internet has progressively changed the way individuals carry out many of their daily tasks. However, recent technological developments have taken Internet dependency to a new

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level. These advances allow individuals to access the Internet more frequently and from more locations than ever before. Additionally, banks, news outlets, and schools now offer many of their services exclusively online. Beyond these services, individuals now look to the Internet to communicate and interact with each other. Large social networking sites have seen escalated levels of interaction among Internet users, increasing the appeal of the Internet and drawing millions of individuals to their sites every day. As individuals begin to abandon traditional forums of social interaction for the convenience of social networking sites, the implications for those unable to access the Internet become substantial.

Increasingly, being connected to society means being connected to the Internet. However, when called upon to determine whether access to the Internet can be denied to convicted criminals as a provision of supervised release, many courts have been unwilling to recognize the magnitude of the Internet's role in the average citizen's life. In light of recent developments, the question of whether courts should continue to restrict access to the Internet as a term of probation or parole needs to be reexamined.

This article will address whether the courts' restrictions on Internet use have become too burdensome in light of society's gravitation to the Internet, which has recently been boosted, in part, by the popularity of social networking sites. Part I of the article will provide a brief overview of where the circuits have come out on the issue and examine their treatment of the Internet's role in general. Part II will address many of the relevant changes that have taken place in the years since this issue was decided in the circuits and analyze their implications. Part III will provide an introduction to social networking sites and discuss their effect on Internet users. Part IV will discuss social networking sites as part of a larger trend toward Internet-based applications as an alternative to localized computing. Lastly, Part V will examine whether the role of the Internet should be reassessed in light of these recent changes in determining whether the Internet can be restricted as a provision of supervised release.

I. DIVERGENCE AMONG THE CIRCUITS

Federal law permits courts, at sentencing, to impose special conditions of supervised release, provided such conditions are reasonably related to factors set forth in sentencing guidelines, involve no greater deprivation of liberty than is reasonably necessary, and are consistent with policy statements issued by the sentencing commission.[1] This

1. 18 U.S.C. § 3583(d) (2006).

affords the courts broad discretion in making such determinations. Since the Internet is a relatively new resource in terms of its availability to the general public, its status and potential for abuse have only recently been considered by the United States judicial system. Between the years of 2000 and 2005, many precedent-setting cases were decided which established each circuit's stance on whether the Internet can be restricted as a term of supervised release and under what circumstances.

Despite the extensive changes brought about by the Internet, not all jurisdictions have been willing to recognize the use of the Internet as a necessity. Rather, many courts have seemingly viewed the Internet as a novelty and convenience. As a result, some courts have upheld broad restrictions on Internet use.[2] Others have held that outright bans on Internet use are excessive and should not be upheld. Most circuits, however, fall somewhere in the middle, holding that restrictions are permissible where they are reasonably related to the goals of the relevant sentencing guidelines and/or allow a defendant to seek exceptions through permission from his or her probation or parole officer.[3]

A. The Fifth Circuit Upholds Broad Restrictions

In *United States v. Paul*, the Fifth Circuit was called upon to determine whether a restriction on Internet use as a term of supervised release was overreaching.[4] The defendant in that case pleaded guilty to possession of child pornography on his hard drive in violation of 18 U.S.C. § 2252A.[5] At sentencing, the district court imposed a number of special conditions, including a provision that the defendant not "possess or have access to computers, the Internet, [or] photographic equipment."[6] In evaluating the hardship caused by the restriction, the court trivialized the reasoning of a Tenth Circuit decision that had found a ban on Internet use overly restrictive because it prevented a defendant from using a computer to check weather forecasts or read newspapers during the term of supervised release.[7] The Fifth Circuit ultimately concluded that an absolute ban on Internet access is not *per se* unacceptable and should be upheld as long as it is reasonably necessary to meet the statutory goals of the guidelines for setting the terms of

2. *See generally* Emily Brant, *Sentencing 'Cybersex Offenders": Individual Offenders Require Individualized Conditions When Courts Restrict Their Computer Use and Internet Access*, 58 CATH. U.L. REV. 779 (2009) (providing a more exhaustive analysis on the different approaches taken by the courts).

3. *See, e.g.,* United States v. Rearden, 349 F.3d 608 (9th Cir. 2003).

4. 274 F.3d 155, 169-70 (5th Cir. 2001).

5. *Id.* at 157.

6. *Id.* at 160.

7. *Id.* at 169-70 (disagreeing with the reasoning from United States v. White, 244 F.3d 1199 (10th Cir. 2001)).

supervised release.[8]

The reasoning from *Paul* was upheld in a more recent Fifth Circuit decision involving a similarly broad Internet restriction.[9] In that case, the defendant challenged two special conditions of his supervised release after having violated them following his conviction of possession of child pornography.[10] The first condition was that he not possess any pornographic or otherwise sexually-oriented material, and the second was the broad condition that he not possess or utilize a computer or Internet connection device during the term of supervised release.[11] The court held that given the defendant's risk of recidivism, a "complete prohibition from such a powerful tool . . . is not unreasonable."[12] The court reaffirmed the *Paul* decision, holding that "an absolute ban on computer and [I]nternet use is acceptable if it is reasonably necessary to serve the statutory goals set forth in [sentencing guidelines]."[13] More revealing, however, was the court's conclusory statements about the role the Internet plays: "[T]hough [the defendant] is correct that computers and the [I]nternet have become significant and ordinary components of modern life as we know it, they nevertheless still are not absolutely essential to a functional life outside of prison."[14]

B. The Second Circuit is Unwilling to Enforce Any Broad Internet Ban

In contrast, the Second Circuit has been less willing than any other circuit to restrict the use of the Internet as a term of probation or parole. In its standout decision in *United States v. Peterson*, the court held that the possibility that a criminal defendant might use a computer to commit crimes in the future did not justify an absolute ban on Internet use.[15] In *Peterson,* a criminal defendant pleaded guilty to writing a bad check.[16] Due in part to the defendant's prior incest conviction, the court imposed a special condition of probation that prohibited him from using or owning a computer with a modem. The restriction did come with the exception that allowed the defendant to use a computer to the extent necessary for his employment. [17] Not persuaded by the reasoning behind the restriction, the court likened the restriction on Internet use to one

8. *Id.* at 170.
9. United States v. Brigham, 569 F.3d 220 (5th Cir. 2009).
10. *Id.* at 222.
11. *Id.* at 223-24.
12. *Id.* at 234.
13. *Id.* (citing *Paul*, 274 F.3d at 170).
14. *Id.*
15. United States v. Peterson, 248 F.3d 79, 83 (2d Cir. 2001).
16. *Id.* at 81.
17. *Id.*

denying the use of other tools for communication saying, "[a]lthough a defendant might use the telephone to commit fraud, this would not justify a condition of probation that includes an absolute bar on the use of telephones."[18] The court went on to reason that the mere possibility of future abusive use did not justify a complete ban on Internet access.[19] Even though this case was decided in 2001—before many of the changes that have caused individuals to rely heavily on the Internet—the *Peterson* court was willing to recognize the Internet's fundamentality.[20] Noting that the technology had become "virtually indispensible in the modern world of communications and information gathering," the court held that such a broad Internet restriction was excessive.[21]

In a later decision, the Second Circuit further clarified its disapproval of Internet restrictions by holding invalid a less restrictive ban that allowed a defendant to access the Internet only by seeking the permission of his probation officer.[22] There, the defendant was convicted of possession of child pornography.[23] At sentencing, the judge imposed a number of special conditions of supervised release, including a condition that "the defendant may not 'access a computer, the Internet, or bulletin board systems at any time, unless approved by the probation officer.'"[24] The court relied upon much of the reasoning in *Peterson*, but also indicated that a ban on Internet access would not be upheld as long as a more tailored alternative existed, reasoning that "a more focused restriction, limited to pornography sites and images, can be enforced by unannounced inspections of [the defendant's] premises and examination of material stored on his hard drive or removable disks."[25] Thus, while the court conceded that the restriction was reasonably related to the purposes of the defendant's sentencing, it held that such a restriction inflicted a greater deprivation of liberty than was reasonably necessary.[26]

In a more recent case, the Second Circuit demonstrated its willingness to allow the use of less restrictive means in sentencing. In *United States v. Balon*,[27] the court upheld a special condition that allowed probation officers to control a defendant's Internet use via the use of monitoring software and random inspections, as well as the removal of hardware for the purposes of a more thorough inspection.[28] The court

18. *Id.* at 83.
19. *Id.*
20. *See id.*
21. *Id.*
22. United States v. Sofsky, 287 F.3d 122, 126 (2d Cir. 2002).
23. *Id.* at 124.
24. *Id.*
25. *Id.* at 127.
26. *Id.* at 126.
27. 384 F.3d 38 (2d Cir. 2004).
28. *Id.* at 49.

held that conditions allowing the removal of the defendant's hardware were not contrary to the holdings in *Peterson* and *Sofsky* because they did not indefinitely deprive the defendant of the use of the Internet.[29] However, in considering the defendant's challenges to off-site monitoring, the court made the interesting observation that determining the level of deprivation of such a restriction is based on technology considerations.[30] Because the condition would not be exercised for three years, rapidly changing technology made it impossible to know whether monitoring Internet access would involve a greater deprivation of liberty than necessary.[31] Therefore, the provisions relating to the off-site monitoring were left to be considered at a later date.[32]

C. Other Courts Conduct a More Fact-Intensive Inquiry

Other circuits have been willing to recognize that criminal defendants have a legitimate interest in using the Internet but have held that it can be restricted under the proper circumstances. These courts have weighed a defendant's interest in using the Internet against the public's interest in safety by engaging in an examination of the facts of each case.

In *United States v. Zinn*, the Eleventh Circuit recognized the increasing importance of the Internet, but held that the defendant's interest in using the Internet was outweighed by the need to protect the public.[33] After the defendant in that case was convicted of possession of child pornography, he was sentenced to a prison term and three years of supervised probation.[34] Among other special conditions imposed by the judge at sentencing, the defendant was prohibited from accessing the Internet without permission from his probation officer.[35] The court was willing to concede that "the Internet has become an important resource for information, communication, commerce, and other legitimate uses, all of which may be potentially limited to [the defendant] as a result of our decision."[36] However, in evaluating the particular circumstances of the case—namely the high level of need to protect young people from the defendant and the provision allowing the defendant to seek an exception—the court held that the trial court's restriction was not overly broad.[37]

29. *Id.* at 48.
30. *Id.* at 46.
31. *Id.*
32. *Id.* at 49.
33. 321 F.3d 1084, 1093 (11th Cir. 2003).
34. *Id.* at 1086.
35. *Id.* at 1087.
36. *Id.*
37. *Id.* at 1093.

Similarly, the Seventh Circuit refused to impose what amounted to a complete ban on Internet use in *United States v. Holm*.[38] Once again, this case involved a defendant convicted of possessing child pornography.[39] However, the court did not feel that the offense justified a ban on Internet use, which was apparently devoid of any exceptions or procedures for "necessary" use.[40] The court viewed the Internet's role as essential, noting that a total ban renders modern life too difficult. For example, the court noted that "the government strongly encourages taxpayers to file their returns electronically, . . . more and more commerce is conducted on-line, and . . . vast amounts of government information are communicated via website."[41] Given this hardship, the court felt that the state's interests could be served with a less restrictive condition such as monitored use.[42]

The Seventh Circuit remained true to this fact-specific analysis in *United States v. Scott*.[43] There, the court indicated that a record of "extensive abuse" of digital communications, as opposed to only a few images of child pornography stored on a computer, might justify an outright ban on the Internet.[44] However, the *Scott* court was not willing to do away with broad Internet bans altogether, noting that "because the Internet is a medium of communication[,] a total restriction rarely could be justified."[45] In dealing with the defendant's claim that a restriction on Internet access can never be upheld, the court held that the Internet may be restricted because of its potential for future misuse.[46] The court noted that without such restrictions, a court might be forced to impose longer sentences where the risk of recidivism was present, and that most defendants would prefer conditioned freedom to a longer prison sentence.[47]

The Third Circuit, looking to the specific details of a defendant's criminal history, also overturned a restrictive ban on Internet use because it lacked exceptions or procedures for the defendant to obtain permission to use the Internet.[48] In a case that involved an exception-free ban similar to that in *Holm*, the court seemed more willing to recognize at least some of the Internet's utility.[49] In doing so, the court recognized that a

38. 326 F.3d 872 (7th Cir. 2003).
39. *Id.* at 873-74.
40. *Id.* at 874.
41. *Id.* at 878-79.
42. *Id.*
43. 316 F.3d 733.
44. *Id.* at 737.
45. *Id.*
46. *Id.* at 736.
47. *Id.*
48. United States v. Freeman, 316 F.3d 386, 391-92 (3rd Cir. 2003).
49. *Id.* at 392.

defendant has a legitimate interest in using increasingly popular Internet-based services such as e-mail, news, and weather forecasts.[50] Additionally, the court held that, where the defendant's criminal conduct was limited to pornography sites and images, banning the defendant's use of legitimate Internet services imposed a greater deprivation than necessary to protect the public where suitable and more focused alternatives were available such as unannounced computer inspections.[51]

The Ninth Circuit has indicated its willingness to uphold broad Internet restrictions where the restriction was reasonably related to a goal of the sentencing guidelines, and where exceptions are made for necessary use.[52] That case involved an Internet restriction imposed on a defendant convicted of sending child pornography to another via e-mail.[53] Noting that while the Internet had become an important means of information and communication, the court held that the restriction of the use of the Internet is permissible in cases where the restriction leaves open the opportunity for appropriate access.[54] The court indicated its willingness to uphold restrictions, provided they are reasonably related to the goal of protecting children and deterring the defendant from reverting to similar conduct,[55] but held that, under the circumstances of the particular case, the "condition does not plainly involve a greater deprivation of liberty than is reasonably necessary . . . because it is not absolute; rather, it allows for approval of appropriate online access by the Probation Office."[56]

D. At Least One Court Considered the Impact of Future Internet Advances

Even where courts have upheld broad bans on the Internet, some have notably remained open to the idea that the Internet might one day become so indispensable to modern life that banning its use would be unduly restrictive. The Fourth Circuit held in a 2004 decision that an Internet use restriction imposed upon a defendant who pled guilty to possessing child pornography did not impose a greater deprivation than reasonably necessary.[57] The court justified its decision by noting that the restriction would not interfere with the defendant's employment because his work history was mainly comprised of positions of manual labor, and

50. *Id.*
51. *Id.*
52. United States v. Rearden, 349 F.3d 608 (9th Cir. 2003).
53. *Id.* at 611.
54. *Id.* at 621
55. *Id.* at 611
56. *Id.* at 621.
57. United States v. Granger, 117 F. App'x 247, 249 (4th Cir. 2004).

that the condition provided a procedure to seek modification to the terms of supervised release.[58] In doing so, the court also noted that the status of the Internet may change in the future: "It is not possible to anticipate with any precision the extent to which computer technology 15 years from now will impact a worker of [the defendant's] skills and training."[59] However, because the ban allowed for modification if the Internet became a necessity for the defendant, the court held that the restriction was permissible.[60]

Lastly, it is important to note that, beyond the broad discretion given to the courts in determining which special conditions to impose at sentencing, some states have taken the next step and enacted legislation that requires judges to impose Internet restrictions upon certain offenders.[61] Such restrictions are more rigid, as they do not afford judges the discretion to make restrictions conditional or provide for exceptions based upon the specific facts of each case or needs of the defendant.

E. What Accounts for the Varied Outcomes?

While the courts involved in the above cases were dealing with restrictions of varying stringency, the underlying issue remained constant: what exactly is the role the Internet plays in modern daily life? Varying perceptions of this role are likely the reason for the varying conclusions among the circuits. It stands to reason that if one perceives the Internet as a recreational distraction or convenience, one will be much more willing to restrict its use than one who believes the Internet is fundamental to modern daily life.

If this is what happened when these cases were decided, the courts need to take a second look at the Internet, particularly in light of recent advancements. For, in the years since, the Internet has taken an increasingly central role in the way people do business, make purchases and travel plans, and interact with one another. Therefore, prohibiting the use of the Internet as a term of supervised release necessarily raises a number of implications not present with other restrictions.[62]

58. *Id.*

59. *Id.*

60. *Id.*

61. Brant, *supra* note 2, at 796-97 (detailing a New Jersey statute requiring judges to impose Internet restrictions on convicted sex offenders).

62. *Id.* at 799. Brant has claimed that these implications include an inability to access ATMs, start a business, and find a job. While these concerns may be valid, there are a number that are more widely applicable and more pressing. These are the implications that will be addressed in this article.

II. WHY A RESTRICTION ON INTERNET USE IS DIFFERENT FROM OTHER RESTRICTIONS

One might argue that, even if the Internet is fundamental to our way of life, restricting it is permissible based on the restrictions imposed on many other important rights for the purposes of supervised release. While it is true that such restrictions are commonplace, the Internet is distinguishable because there are no longer any suitable alternatives. For example, an individual who loses driving privileges due to a DUI conviction is not confined to the walls of his or her own home. Instead, such an individual can rely on a plethora of public transportation options, rides from family and friends, and alternative modes of transportation like walking or riding a bicycle. By contrast, an individual banned from cyberspace often will not be able to enjoy many important aspects of modern life. The reason is twofold.

First, many online services that were offered ten years ago have become more prevalent and have undergone significant upgrades. For example, online banking now allows customers to closely monitor accounts and transfer money without leaving their homes. The usefulness of the ability to closely monitor bank accounts should not be overlooked, as fraud and identity theft have become increasingly rampant. Additionally, some banks are willing to pay higher interest rates on online savings accounts due to their lower maintenance costs.[63] Thus, online banking is a great example of an increasingly common occurrence: those willing to conduct business online are given access to benefits not offered to those who are not. This means that even though a defendant may have an alternative means of accessing the services offered online, doing so may cause him more hardship than mere inconvenience.

Second, many services that were once offered as alternatives to more traditional methods have now become the standard and—in many instances—are now offered exclusively online. As features like college registration, job applications, and many state-offered services move exclusively into the realm of the Internet, their impact on convicted felons who are denied access to the Internet becomes palpable.[64] Additionally, large retailers like Target and Wal-Mart now offer an array

63. For example, HSBC offers an online savings account with an interest rate that exceeds the rate it is willing to pay for most other savings accounts. *Personal Savings Products*, HSBC, http://www.us.hsbc.com/1/2/3/personal/savings (last visited Oct. 1, 2010). One possible reason banks are willing to do this may be because online accounts can be maintained with less overhead.

64. For example, attendance at the University of Colorado requires Internet access to register for classes, view grades, and, in most instances, receive course information like syllabi and reading assignments. *Courses and Registration*, UNIVERSITY OF COLORADO LAW SCHOOL, http://www.colorado.edu/law/academics/registration/ (last visited Oct. 1, 2010).

of products online which are not offered in their stores.[65] As the number of services being offered exclusively online increases, the greater the effect of depriving people of the use of the Internet becomes.

In *United States v. White*, the Tenth Circuit evaluated the usefulness of the Internet and recognized that a defendant banned from the Internet might necessarily be restricted from using it for legitimate purposes such as "using a computer at a library to do any research, get a weather forecast, or read a newspaper online."[66] Under those circumstances, the court overturned the broad restriction, holding that it failed to properly balance the competing interests of the state and defendant.[67]

The court in *White* was probably not in a position at that time to foresee the possibility that those services might one day soon be offered exclusively online. However, in the years since, others have observed the demise of traditional newspapers and now predict a future of revolutionized journalism that will be found primarily online.[68] Their words have proven prophetic in recent months as many large newspapers, once thought to be permanent fixtures in large metropolitan areas, have closed their doors for good.[69] While television remains a viable alternative for obtaining information, it is still deficient in at least one regard: television does not provide access to local headlines, weather, and traffic updates, as does the Internet, at a time of the user's convenience. Instead, those restricted from the Internet are forced to wait for scheduled television programming to be provided this information. Of course, those without time to wait must necessarily go without. This puts individuals into the position they were in before the Internet existed. The problem with that is that now they are there alone.

A. The Internet, Version 2.0: Wireless

This drastic shift toward online services can be attributed in part to a change in how the Internet is accessed. At the time of the *Paul* and

65. A product search at Target.com, for example, reveals a large number of products which include the caveat, "This item is available online, but is not available in stores." *Best Sellers in Kitchen + Dining*, TARGET http://www.target.com (click Kitchen; then click Kitchen + Dining Furniture; then click Bestsellers; then click on the various displayed products) (last visited Oct. 1, 2010). *See also*, Emily Fredrix, *Wal-Mart Offering Low-Cost Caskets, Urns On Its Website*, THE HUFFINGTON POST, Oct. 28, 2009, http://www.huffingtonpost.com/2009/10/28/wal-mart-caskets-urns-off_n_337366.html (describing how Walmart now sells caskets online at a discounted price).

66. *White*, 244 F.3d 1199, 1206 (10th Cir. 2001).

67. *Id.*

68. Paul Gillin, *How the Coming Newspaper Collapse will Reinvent Journalism*, (Dec. 15, 2006), http://www.gillin.com/Collapse_of_newspapers.pdf.

69. The Rocky, *Goodbye Colorado*, THE ROCKY MOUNTAIN NEWS, Feb. 27, 2009, at A1 (publishing its last daily just 55 days shy of its 150th anniversary).

Peterson decisions, the Internet was accessed exclusively by computers through telephone lines. This meant that most access took place at home or work. The fact that the Internet was accessed only from a machine tethered to a wall limited the frequency and the amount of time most people were able to spend surfing the Web.

Now, thanks to technological advancements like wireless routers and smartphones, the Internet goes where we go. Today, iPhones, BlackBerries, and Androids are objects of worship, allowing people to access a world of information while riding on a bus, waiting to pick up their children from soccer practice, or lying on a beach during a vacation. Not only are more people accessing the Internet, but they are doing it more often, for longer periods of time, and from wherever they happen to be at that moment. This increased mobility makes Internet applications like e-mail and instant messaging a more desirable and necessary form of communication than they were before this technology existed. For example, before the Internet went "mobile," those whose lifestyle afforded little time to sit at a desktop computer and type out an e-mail would likely find cell phone conversations or text messages a preferable form of communication to any Internet medium.

If wireless technology alone was not sufficient to drastically increase the Internet's popularity, the fact that it may soon be offered for free certainly is. Various cities across the United States have either implemented or are currently considering initiatives that would provide free wireless access to their citizens.[70] Such publicly owned services further distinguish Internet service from other media. In a world where virtually all other forms of communication—whether telephone service, postal service, or even face-to-face contact—require at least some form of monetary expenditure, the prospect of a free medium must necessarily create substantial gravitation.

Now that the Internet can be accessed wirelessly via cellular phone or laptop computer, as will be discussed below, there are a number of reasons that people who are pressed for time might elect to communicate via Internet rather than any other medium.

III. THE RISE OF SOCIAL NETWORKING

Of all the changes that have occurred since the circuit courts first analyzed the necessity of the Internet, the proliferation of social networking sites is the most noteworthy. The most popular social networking sites, currently Facebook and MySpace, have hundreds of

70. Hannibal Travis, *Wi-Fi Everywhere: Universal Broadband Access as Antitrust and Telecommunications Policy*, 55 AM. U.L. REV. 1697, 1700-01 (2006) (noting that San Francisco, Philadelphia, New York City, and New Orleans are among the first to pursue city-wide Wi-Fi access).

millions of active account holders worldwide, and their usage statistics are astounding.[71] As we shall see, social networking sites have created a surge in Internet popularity, and—at least among some age groups—have become more popular than any other type of website.[72] However, to understand the impact these sites have had on the way people use the Internet, it is necessary first to understand what they are. One researcher defines social networking sites as

> Web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system.[73]

In other words, social networking sites are those that allow users to create a profile that can be viewed by other users, the extent of which is typically controlled by each individual user. The profile allows other site users to locate and identify others whom they may or may not already know. Profiles vary from site to site but usually include photographs uploaded by the user and certain personal information posted at the user's discretion. Once users find one another on the site, they can begin communicating by posting messages (both publicly and privately), viewing one another's photographs, and establishing contacts with mutual friends. Many social networking sites such as Facebook, allow users to create "groups" where like-minded individuals can join and exchange ideas about matters of common interests.[74] While there are hundreds of social networking sites available online, some of the more well-known include Facebook, MySpace, Twitter, Bebo, and Classmates.[75] While the term "networking" implies that people use these sites to make new connections, which is certainly possible, the sites are

71. Bianca Bosker, Google Ranks Top 13 Most Visited Sites on the Web, THE HUFFINGTON POST BLOG (Aug. 28, 2010, 5:12 AM), http://www.huffingtonpost.com/2010/05/28/most-visited-sites-2010-g_n_593139.html#s94487&title=7.%20Blogspot.com (last visited Dec. 29, 2010) (reporting that Facebook is now the most visited website worldwide).

72. Bill Tancer, *Facebook: More Popular Than Porn,* TIME MAGAZINE ONLINE, Oct. 21, 2007, http://www.time.com/time/business/article/0,8599,1678586,00.html.

73. Danah Boyd & Nicole B. Ellison, *Social Networking Sites: Definition, History, and Scholarship* 13 J. OF COMPUTER MEDIATED COMMC'N 210, 211 (2007).

74. Political groups, for example, have been particularly popular on Facebook. In many instances, groups form in reaction almost immediately in response to specific actions of elected officials. One of the largest of these groups is named "I bet we can find 1,000,000+ People who disapprove of the Health Care Bill." *Groups*, FACEBOOK, http://www.facebook.com/search/?flt=1&q=madd&o=69#!/group.php?gid=370668318969&ref=ts (last visited Oct. 1, 2010).

75. Bosker, *supra* note 71.

more commonly used to maintain relationships created in another forum.[76]

In recent years, social networking has become an increasingly utilized means of social interaction. Founded in February 2004 as a social utility for high school and college students, Facebook's rapid growth is staggering.[77] Currently the most popular social networking site, there are more than 500 million active Facebook accounts worldwide.[78] Additionally, Facebook claims that 50 percent of active users access their Facebook accounts on any given day.[79] In fact, Facebook recently became the most popular website in the United States, accounting for more than seven percent of all U.S. visits.[80]

But Facebook is not the only site with impressive membership statistics. MySpace launched in January 2004 and had one million members within the first month.[81] Currently MySpace claims 122 million active users worldwide, with over 70 million of them residing in the United States.[82]

More remarkable than the number of people joining the social networking bandwagon are the demographics of the members themselves. Facebook claims that its fastest growing demographic is the age group 55 years of age and older.[83] The fact that so many older people are drawn to Facebook seems indicative of a much more significant occurrence: Facebook may be responsible for extending the Internet's appeal to a broader audience, leading to a greater overall level of Internet literacy. If people who once thought that the Internet was the domain of a younger generation, and that the Internet had nothing to offer them, have suddenly found a reason to "surf" in Facebook, then more Internet traffic will likely spill over into other areas of the World Wide Web.

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76. *Factsheet*, FACEBOOK, http://www.facebook.com/press/info.php?factsheet (last visited Dec. 29, 2010) (explaining that one of the primary purposes of Facebook is to facilitate information sharing within real life social networks).

77. *Id.*

78. *Statistics*, FACEBOOK, http://www.facebook.com/press/info.php?statistics (last visited Dec. 29, 2010).

79. Facebook also claims that more than 200 million of those users access their accounts via their mobile phones. *Id.*

80. Michael Arrington, *Hitwise Says Facebook Most Popular U.S. Site*, TECHCRUNCH (Mar. 15, 2010), http://techcrunch.com/2010/03/15/hitwise-says-facebook-most-popular-u-s-site.

81. *Timeline*, MYSPACE, http://www.myspace.com/pressroom/timeline/ (last visited Oct. 1, 2010).

82. The site also claims that 100,000 people sign up for a MySpace account every day. *Factsheet*, MYSPACE, http://www.myspace.com/pressroom/fact-sheet (last visited Oct. 1, 2010).

83. Peter Corbett, *Facebook Demographics and Statistics Report 2010– 145% Growth in 1 Year*, ISTRATEGYLABS (Jan. 4, 2010), http://www.istrategylabs.com/2010/01/facebook-demographics-and-statistics-report-2010-145-growth-in-1-year.

Regardless of whether Facebook is responsible for or merely illustrative of an increase in Internet literacy among older people, the fact that the Internet is now being used by a broader audience strengthens the argument that the Internet is now a fundamental aspect of daily life.

Additionally, Facebook's shifting demographic has gained recognition by businesses and others who are beginning to see the social-networking giant for the marketing cash cow it really is.[84] As Facebook's popularity grows, and the Internet's popularity continues to catch the eye of the business industry, there will likely be a greater drive to ramp up the services that companies are offering online. When that day comes, those unable to access the Internet for one reason or another will truly have a different type of existence than those who are free to explore cyberspace.

Of course, it comes as no surprise that Facebook's popularity among younger generation users appears to know no bounds. Nevertheless, the numbers are remarkable. According to at least one author keeping track, social networking sites are the number one online venue among consumers age 18 to 24.[85] This means that, at least among the younger demographic, social networking is more popular than search engines, e-mail sites, retailer websites, and Internet pornography.[86]

The social networking phenomenon has also caught the attention of a number of sociologists. According to one sociologist, social networking has become a "critical element" of social interaction among youth.[87] She contends that traditional forums for youth interaction are being replaced by their online counterpart.[88] Shopping malls, parks, and other areas governed by adult oversight are apparently being abandoned for the freedom provided by online forums; specifically, social networking sites.[89]

A. What do Social Networking Sites Actually Offer?

If one is unfamiliar with social networking sites like Facebook and MySpace, one might wonder, "why all the hype?" The answer to that question is that these sites have become wildly popular because they allow people to interact and stay connected in a way that previously was not possible. While the services offered by these sites vary to some degree, all networking sites allow people to create a customized profile,

84. *See* Aaron Ricadela, *Fogeys Flock to Facebook*, BUSINESSWEEK (Aug. 6, 2007, 12:01 AM EST), http://www.businessweek.com/technology/content/aug2007/tc2007085_051788.htm.

85. Bill Tancer, *Facebook: More Popular Than Porn*, TIME MAGAZINE ONLINE (Oct. 21, 2007), http://www.time.com/time/business/article/0,8599,1678586,00.html.

86. *Id.*

87. danah boyd, *Friendship*, DIGITAL YOUTH PROJECT, http://digitalyouth.ischool.berkeley.edu/book-friendship (last visited Sept. 28, 2010).

88. *Id.*

89. *Id.*

listing as little or as much information as an individual chooses to display. Rather than trying to keep up with all contacts individually (whether in person, by telephone, or even by e-mail), a person using a social networking site can post information on his or her profile and update the information at his or her convenience. Rather than get caught in a lengthy phone conversation, or writing a lengthy e-mail, an individual using a social networking site can communicate with a large number of individuals quickly by posting a generic update on one's own profile page, or by posting a series of small messages to various individuals.

Facebook, for example, allows individuals to list age, marital status, personal interests, favorite quotes, political views, and more.[90] Users can search for friends by way of the site's search engine or by browsing the profiles of others. Facebook can even find people it thinks a person might know due to their having attended the same school, having worked for the same employer, or having mutual friends and suggest them to the user. The user can then send a "friend" request to other users who can choose to accept or ignore them. If a "friend request" is accepted, the users will be allowed to view each other's profiles, send messages, and post comments.[91] Facebook also include an instant messenger feature that allows friends to communicate in real-time. Additionally, users can create "groups" and invite other like-minded individuals to join. Members of a same group can then mingle, network, and commiserate over the same issues.

With the large number of features offered by these sites, it comes as no surprise that people who use them prefer social networking sites over other forms of communication. As at least one observer to the Facebook craze has pointed out, Facebook is fast replacing other online communication tools like e-mail.[92] Against this background of seemingly overnight popularity, it is understandable that, at least for some demographics, one must be connected to the virtual superhighway to be a part of one's own social network.

The impact of social networking extends beyond merely the format in which people interact and has begun to affect our language as well. In November 2009, the Oxford New English Dictionary announced its 2009 Word of the Year: "unfriend."[93] The word is defined as a verb

90. MySpace profiles include many of the same features but also allow users to customize background displays and upload music to be played whenever the profile is displayed. *See, e.g.*, *Myspace Music*, http://www.myspace.com/music (last visited Oct. 25, 2010).

91. *See Controlling How You Share*, FACEBOOK, http://www.facebook.com/privacy/explanation.php (last visited Sept. 28, 2010).

92. Tancer, *supra* note 85 (referring to Facebook as "e-mail 2.0").

93. David Coursey, *Top Word of 2009: Unfriend, But Twitterisms Abound*, PCWORLD (Nov. 17, 2009, 9:12 AM)

meaning to remove someone as a 'friend' on a social networking site such as Facebook.[94] According to the Dictionary's senior lexicographer, the word was at least partially selected because it has both currency and potential longevity,[95] indicative of a general consensus that social networking is more than a mere temporary fad.

IV. WHAT SOCIAL NETWORKING MEANS FOR THE FUTURE OF INTERNET USE

The impact of Web-based social networking sites is perhaps best understood when viewed as part of a larger trend known as cloud computing. Because cloud computing is a relatively newer concept, it is not surprising that there is still substantial disagreement over the exact definition.[96] For the purposes of this article, cloud computing refers to Web-based programs that store data and programs on commercial servers, allowing individuals and companies to access their accounts from any device with an Internet connection. Under this broad definition, Web-based e-mail sites like Hotmail, Gmail, and Yahoo Mail[97] are well established cloud computing websites because they store all e-mail and personal content online rather than on each individual's computer. Naturally, social networking also fits within this definition because accounts containing all one's personal information is stored "in the cloud" by commercial servers and can be accessed from any location via the Internet.

This technology appeals to consumers for a number of reasons, not the least of which is that they no longer need to store information on individual hard drives. Large amounts of personal information can now be stored in cyberspace, thus eliminating the need for machines with expansive storage capabilities. Moreover, consumers find the technology more convenient because it eliminates the need to transfer files by e-mail

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http://www.pcworld.com/businesscenter/article/182352/top_word_of_2009_unfriend_but_twitterisms_abound.html. A runner up was the term "hashtag;" a word derived from the latest social networking craze, Twitter. Its meaning? "[A] # [hash] sign added to a word or phrase that enables Twitter users to search for tweets (postings on the Twitter site) that contain similarly tagged items and view thematic sets."

94. *Id.*

95. *Id.*

96. *See* Eric Knorr & Galen Gruman, *What Cloud Computing Really Means: The Next Big Trend Sounds Nebulous, but It's Not So Fuzzy When You View the Value Proposition from the Perspective of IT Professionals*, INFOWORLD, http://www.infoworld.com/d/cloud-computing/what-cloud-computing-really-means-031?page=0,0 (last visited Oct. 25, 2010). This article also includes helpful illustrations which demonstrate the potential value of cloud computing from a practical standpoint.

97. *See* HOTMAIL, http://www.hotmail.com (last visited Dec. 21, 2010); GMAIL, http://www.gmail.com (last visited Dec. 21, 2010); and YAHOO, https://login.yahoo.com (last visited Dec. 21, 2010).

or flash drive from one computer to the next, a familiar problem for anyone who has ever tried to take files from the office for a weekend of work at home.

The future implications of this technology are virtually limitless, and are currently the topic of much discussion in blogs and chatrooms.[98] However, for the purposes of demonstrating how it will shape the future of Internet use (and specifically those banned from using it), there are at least two important implications.

First, as the demand for cloud computing technology increases, more and more applications and programs will be made available "in the cloud." Software manufacturers will, of course, adapt to meet demands for the streamlined computing that the cloud provides. This will necessarily impact the number of software applications that are available for purchase and storage on an individual hard drive. Under such a trend, it is no stretch of the imagination to envision a world where one cannot so much as access a word processing program to draft a letter without connecting to the Internet.

Second, the ability to store large amounts of information "in the cloud" increases the appeal of devices like netbooks; miniature laptops with relatively less power and storage space that were designed to make Internet navigation more convenient.[99] More recently, thanks to computer giant Apple's release of the iPad, these services are increasingly available in tablet form.[100] As demand for a mobile Internet rises, it is likely that these devices will become increasingly popular, which—for the reasons described above—will further ostracize individuals burdened by an Internet restriction.

If the proposition that all software will one day be based and stored on the Internet seems speculative or farfetched, the following might come as a surprise: it is already happening. In July of 2009, Internet giant Google announced the release of a new operating system designed with the Internet in mind: Google Chrome OS.[101] The new system will facilitate speed by doing away with bulky applications that take up

98. *See* Oliver, *What Cloud Computing Means for You*, ZETA (Jan. 22, 2009, 4:32 PM), http://www.zeta.net/industry-news/what-cloud-computing-means-for-you.html.

99. Currently, all major computer manufacturers offer netbooks. *See, e.g.*, *Dell Inspiron Mini Notebooks*, DELL, http://www.dell.com/content/topics/segtopic.aspx/laptop-mini-alt?c=us&l=en&cs=19 (last visited Sept. 28, 2010).

100. *See* Barb Dybwad, *9 Upcoming Tablet Alternatives to the Apple iPad*, MASHABLE, http://mashable.com/2010/01/27/9-upcoming-tablet-alternatives-to-the-apple-ipad (last visited Oct. 25, 2010).

101. Sundar Pichai, *Introducing the Google Chrome OS*, THE OFFICIAL GOOGLE BLOG (July 7, 2009, 9:37 PM), http://www.googleblog.blogspot.com/2009/07/introducing-google-chrome-os.html. The system is slated to be released in late 2010 and will first be available on netbooks.

valuable hard drive space and store all information on the Web.[102]

V. REASSESSING THE INTERNET'S ROLE

In light of these changes, the time has come for the courts to reevaluate the Internet's role in modern society. The question of whether or not the Internet may or may not be restricted as a term of supervised release is just one of many that cannot be satisfactorily answered unless the courts recognize current trends and understand exactly what the Internet is. While the Internet's exact role will likely always be a point of some disagreement, the decisions of courts like the Fifth Circuit reflect a gross underestimation of the Internet's potential. Even if the Internet is not everything the Second Circuit believed it to be in 2001,[103] viewed against the background of recent advances like social networking sites, it can no longer be considered the frivolous convenience the Fifth Circuit apparently characterized it to be.[104]

A. The Second Circuit May Have Been Right

In the wake of the rise in Internet use, at least in part, by the popularity of social networking sites, the Second Circuit's position seems to have been reinforced. If the Internet was not yet "virtually indispensible" in 2001, as the *Peterson* court declared it to be,[105] the advents of the years since surely must have made it so. The Internet now may very well be necessary to ex-offenders to be productively involved in society. It would seem that if a parolee is restricted to the extent that he can no longer function in the very society to which the system is meant to return him, its purpose necessarily becomes suspect.

If current trends continue, it is likely that more and more services will be offered exclusively online, putting banned individuals at a disadvantage. Moreover, as traditional forms of social interaction take a back seat to social networking sites, those banned from their use will be deprived of a valuable resource. Given the utility of the Internet, one must wonder if a broad ban on Internet access is an appropriate course of action where less burdensome means of protecting public interests are available. Certainly, probation officers can monitor Internet usage by making unannounced inspections of an ex-criminal's home or place of work. While this method does not prevent an ex-criminal from creating a safety risk, it does provide a certain level of deterrence. If ex-offenders are aware that their surfing will, or is likely to be, reviewed by an

102. *Id.*
103. United States v. Peterson, 248 F.3d 79, 83 (2d Cir. 2001).
104. United States v. Paul, 274 F.3d 155, 169-70 (5th Cir. 2001).
105. *Peterson*, 248 F.3d at 83.

individual with the power to send them back to prison, it stands to reason that they are more likely to behave. Additionally, terms of restrictions can and should be individually tailored to each offender based on individual needs and level of risk posed to avoid restrictions that are overly broad.[106] Undoubtedly, the hardship created by a complete ban on Internet access seems excessive if the goals of protecting the public can be adequately achieved by means of less restrictive monitoring.

B. An Argument for Restricting the Internet

While the Internet now plays a more integral part in American life, it does not necessarily follow that it should not be restricted as a term of supervised release in all cases. The fact that the Internet is so fundamental to our day-to-day life may also bolster the argument that convicted felons whose Internet access presents a danger to others should be denied its unrestricted use. There are at least two reasons for this.

First, an Internet restriction's deterrent effect is much more potent now that the Internet has become so vital to our modern way of life. Indeed, some might argue that it is precisely the appeal of the Internet, bolstered significantly by the advent of social networking, which makes the restriction of its use so effective. If the Internet is now actually so fundamental to our existence, perhaps people will think twice before doing anything that might jeopardize their ability to access it in the future. After all, deterrence plays a central role in our legal system's theory of punishment.[107]

Second, if social networking sites have extended the Internet's appeal to a broader demographic, it may be that ex-offenders should be denied Internet access because there are now more people online needing protection from predators. The increased Internet traffic brought about by the popularity of social networking sites, especially among a previously "Internet-illiterate" demographic, means a greater danger for Internet crime. Given that social networking sites provide opportunities for Internet predators of all kinds to find potential victims, there is arguably a greater need to keep those who have proven to have such a disposition from accessing them.

It is no secret that social networking sites have been used by predators to commit various types of crime in the past. MySpace was the first to be targeted by law enforcement agencies with accusations that it

106. Such flexibility is also not possible under rigid state statutes which mandate broad bans.

107. *See* 18 U.S.C. § 3553(a)(2) (2006). In considering the need for the sentence imposed, § 3553(a)(2) instructs courts to examine, among other things, its adequacy to deter criminal conduct as well as the need to protect the public from further crimes of the defendant.

does not do enough to protect its users.[108] Recently, Facebook faced similar accusations from the Connecticut Attorney General's Office which complained that registered sex offenders have, in at least three cases, been allowed to create accounts and retrieve "inappropriate images and content."[109] If the proliferation of convicted sex offenders on social networking sites was not painfully evident before, it certainly became so when MySpace announced that it had deleted 29,000 profiles that were found to have been set up by convicted sex offenders during a screening process.[110]

Logically, since these sites are so popular among younger people, there is a greater need to keep convicted sex offenders from accessing them. The efforts of MySpace and Facebook to screen profiles created on their sites, while admirable, cannot be completely successful absent the necessary resources possessed only by law enforcement. There are simply too many sex offenders for the companies to monitor. Moreover, state law enforcement agencies are, or should be, monitoring these sex offenders already through their probation officers. Regardless of the efforts made by these companies to protect the public, the fact remains that the states are saddled with the responsibility, are best equipped to monitor the activity of felons, and most likely to prevent potential victims from being targeted.

The security concerns brought about by the social networking movement are not limited to those surrounding sexual predators, but extend to hackers as well. Since social networking and other cloud computing sites are proliferating, more sensitive information will be stored by their users online than ever before. While providers must and will certainly take steps to protect user information, the increased opportunity to commit identity theft and other related crimes seems to strengthen the argument that those who have proven themselves willing to commit such crimes should be prevented from accessing the Internet.

CONCLUSION

Together with the many changes that have come to pass since this issue was first addressed by the various circuits, social networking has changed the way people think about and use the Internet. Particular social networking sites may come and go over the next few years,[111] but

108. Brad Stone, *New Scrutiny for Facebook over Predators*, N.Y. TIMES (July 30, 2007), http://www.nytimes.com/2007/07/30/business/media/30facebook.html.

109. *Id.*

110. *Id.*

111. For example, there is good reason to believe that Bebo may be on its way out. *See* Andre Yoskowitz, *AOL to Sell or Shutdown Bebo Social Networking Site*, AFTERDAWN (Apr. 8, 2010, 12:10),

the overall trend remains constant: people are increasingly abandoning traditional means of communication and embracing social networking sites as their new means of staying connected. Social networking has changed and continues to change the way people communicate with one another and manage their daily lives. Therefore, those burdened by a broad restriction on Internet use are not able to interact in the same way as those who are not.

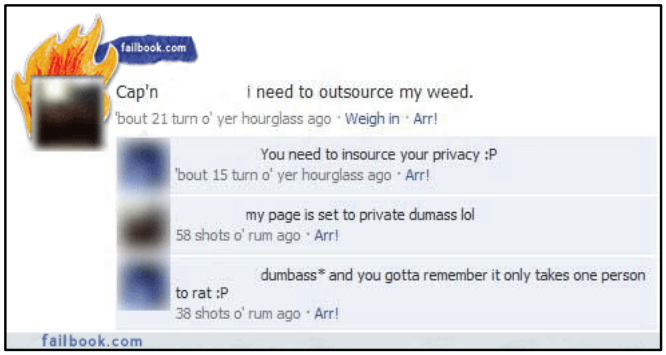
In examining the current trend, the future becomes apparent. If social networking sites like Facebook and MySpace have not yet catapulted the Internet out of the realm of modern convenience and into that of societal necessity, they have certainly taken it a giant step in that direction. Undoubtedly, other cloud computing applications, together with the popular hardware created to accommodate them, will have an irrevocable effect on the use of the Internet. Moreover, because the Internet has such a sturdy hold on America's youth—a generation that grew up using computers and online resources—restricting access to the Internet will have a fundamentally different meaning and greater impact for them than it does for the current generation of convicted felons—or for current circuit judges for that matter. Against this background, the Second Circuit seems to have been right about broad Internet bans, especially since less restrictive alternatives abound.

The time has come for the Fifth Circuit's statement in *Brigham* that the Internet and computers "still are not absolutely essential to a functional life" to be reexamined. Regardless of whether or not one believes the Internet should be restricted as a term of supervised release, the courts need to reassess the argument, this time recognizing the Internet's elemental role in modern society. No court can reach a valid conclusion about prohibiting Internet access without first acknowledging the significance of what is being prohibited. Due to recent advances which have caused a surge in Internet popularity and utility, the Internet is nothing less than essential to our modern way of life.

http://www.afterdawn.com/news/article.cfm/2010/04/08/aol_to_sell_or_shutdown_bebo_social_networking_site.

BALANCING THE SCALES OF JUSTICE: UNDERCOVER INVESTIGATIONS ON SOCIAL NETWORKING SITES

Shirin Chahal*



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INTRODUCTION

According to media research group The Nielsen Company, social network use in February 2009 exceeded Web-based e-mail use for the first time.[1] Social networking sites ("SNSs") such as Facebook, MySpace, Twitter, and LinkedIn[2] have pioneered new kinds of services "unseen in human history, in which hundreds of millions of people are connected in an intimate way, sharing information and e-mails and photos in real time, making new contacts, and rapidly erasing 'the fine line between public and private.'"[3] Use of SNSs is unlikely to decline as the youngest generations of Internet users continue to completely integrate their personal and social lives with these sites. Additionally, as Internet use has increased, so has the legal use of information mined from SNSs.[4] Law enforcement officials and attorneys are increasingly finding information

1. NIELSEN ONLINE, THE NIELSEN CO., THE GLOBAL ONLINE MEDIA LANDSCAPE 6 (2009).

2. FACEBOOK, http://www.facebook.com (last visited Nov. 23, 2010); MYSPACE, http://www.myspace.com (last visited Nov. 23, 2010); TWITTER, http://twitter.com (last visited Nov. 23, 2010); LINKEDIN, http://www.linkedin.com (last visited Nov. 23, 2010).

3. *Facebook: The Privacy Backlash*, THE WEEK, May 20, 2010, at 18 [hereinafter *Privacy Backlash*].

4. *See, e.g.*, Nancy Hass, *In Your Facebook.com,* N.Y. TIMES, Jan. 8, 2006, at 4A30; Vesna Jaksic, *Finding Treasures for Cases on Facebook,* NAT'L L.J., Oct. 15, 2007, http://www.law.com/jsp/lawtechnologynews/PubArticleLTN.jsp?id=900005493439; Daniel L. Brown & Aimee R. Kahn, *Savvy Use of Social Networking Sites,* N.Y. L.J., Special Section (Sept. 8, 2009).

online that is highly relevant to their civil and criminal cases, and there are numerous instances where information gleaned from an SNS proved to be a key part in a legal action.[5] Despite this increased use of SNS information, the legal community has not yet reached a consensus on the legal and ethical issues involved in using these sites for investigations.

This note focuses on criminal discovery and the way both the government and the defendant can obtain access to information on social networking profiles. Both sides acknowledge that SNS research has become a critical investigative tool during discovery and trial.[6] However, defense attorneys lament the critical differences between the government and the defendant in the way SNS research can be conducted, and many have expressed concern that this disparity may gravely impact concepts of adversarial fairness and the pursuit of justice in the criminal legal system.[7]

Prosecutors, as government agents, have traditionally had more access than defense attorneys to resources that may reveal information on which to build their cases and convict defendants. This inequality has been justified under the government's duty to protect the public from the harm of criminal conduct. Today, however, defense attorneys desire access to SNS research tools because these processes may be just as likely to uncover exculpatory information that could help prove innocence as they are to uncover inculpatory information.

The government is afforded several ways to obtain private SNS

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5. *See, e.g.,* Clark v. State, 915 N.E.2d 126, 130 (Ind. 2009) (The Indiana Supreme Court allowed evidence from the defendant's MySpace page as character evidence when his defense strategy relied upon his propensity for irresponsible behavior to obtain a jury verdict on the lesser-included offense of reckless homicide.); People v. Liceaga, 2009 Mich. App. LEXIS 160, *7-8 (Mich. Ct. App. 2009) (The prosecutor admitted photographs from defendant's MySpace page as evidence of intent and planning.); *In re K.W.,* 666 S.E.2d 490, 494 (N.C. Ct. App. 2008) (An alleged child abuse victim's MySpace page was admitted as impeachment evidence.); Eamon McNiff, *Teen Party Crashers Allegedly Cause $45,000 Worth of Damage to House,* ABC NEWS (Mar. 31, 2010), http://abcnews.go.com/TheLaw/Technology/teen-party-crashers-arrested-destroying-house/story?id=10240377 (Police found teens bragged about vandalism on a Facebook page entitled "The Homewrecker Crew."); Mary Pat Gallagher, *MySpace, Facebook Pages Called Key to Dispute Over Insurance Coverage for Eating Disorders,* LAW.COM (Feb. 1, 2008), http://www.law.com/jsp/law/LawArticleFriendly.jsp?id=900005559933; Vesna Jaksic, *Finding Treasures for Cases on Facebook,* NAT'L L.J., Oct. 15, 2007, http://www.law.com/jsp/lawtechnologynews/PubArticleLTN.jsp?id=900005493439 (The defense attorney was able to prove a man other than his client was the initial aggressor because the man's MySpace page contained a video of him beating someone up.); Jim Dwyer, *The Officer Who Posted Too Much on MySpace,* N.Y. TIMES, March 10, 2009, at A24 (A defense attorney used MySpace and Facebook evidence to question the credibility of the defendant's arresting officer.).

6. To hear some of these discussions, see podcasts: Conference on Social Networks: Friends or Foes? Confronting Online Legal and Ethical Issues in the Age of Social Networking, held by UC Berkeley School of Law (Oct. 23, 2009), *available at* http://www.law.berkeley.edu/7458.htm.

7. *Id.*

information from an individual's profile or account. First, the prosecutor can be closely involved in deceptive, undercover operations. For example, the Electronic Frontier Foundation, a San Francisco-based civil liberties group, recently obtained a Justice Department document that detailed the use of SNSs by FBI and other law enforcement agents to exchange messages with suspects, identify a target's friends or relatives, and browse private information such as postings, personal photographs and video clips.[8] Second, the Electronic Consumer Privacy Act ("ECPA") provides the prosecutor with tools to compel the production of SNS information.[9] These legal processes are similar to others used by government agents outside the virtual world (e.g., subpoenas, search warrants). However, many practitioners argue that SNSs have such great potential to store exculpatory, impeachment, and other types of evidence that this inequality of legal process as well as the lack of access to undercover data puts them at a crucial disadvantage.

Part I of this note explores how SNSs work and the kind of information that can be found on an SNS profile. Part II examines some of the privacy issues that involve SNSs, including the scope and applicability of relevant law. Part II.A surveys the privacy laws in the United States and some of the arguments on how these laws should apply to cyberspace in general and to SNSs in particular. Part II.B takes a look at the ECPA and explains how the statute compels private communications providers to turn over records and other information to the government. Part II.C argues that neither SNS providers nor the law can properly address all the privacy issues and concerns raised by the legal use of SNS information. Therefore, this section argues that the onus must be on the SNS user to assess the risk and protect his information accordingly.

Part III looks at criminal discovery and the constitutional, statutory, and ethical obligations that guide and regulate it. Part III.A examines the current procedures followed by prosecutors and defendants in bringing convictions and preparing for trial. Part III.B summarizes some of the competing ideas on how a non-government attorney can conduct SNS research within the confines of constitutional, statutory, and ethical constraints. Finally, Part III.C demonstrates how a more liberal approach to SNS investigation can be supported by current ethics rules and some of the accepted policies behind our criminal judicial system.

Overall, this paper focuses on how disparate standards in criminal

8. Richard Lardner, *Feds Going Undercover on Facebook, Twitter, Other Social Networking Sites*, ATLANTA J.-CONSTITUTION (Mar. 31, 2010, 04:36 PM), http://www.ajc.com/news/feds-going-undercover-on-423303.html.

9. Electronic Communication Privacy Act of 1986, Pub. L. 99-508, 100 Stat. 1848 (codified in scattered sections of 18 U.S.C.).

procedure, the ECPA, and the ethical rules have created a confusing landscape for the lawyer looking to conduct factual research on an SNS. These disparities should be reconciled in order to aid the criminal discovery process and the pursuit of justice. Specifically, in trying to access SNS information, certain practices that involve the use of undercover investigative techniques, particularly those conducted by an attorney's agents, should be allowed in order to rectify the disparity between prosecutors and defense attorneys. This note will show that similar practices conducted outside of cyberspace have been endorsed by the courts and can readily be applied to SNSs without breaking website terms of service or use.

I. A BRIEF BACKGROUND ON THE RISE AND USE OF SOCIAL NETWORKING SITES

Facebook, MySpace and Twitter are three of the most popular social networking sites.[10] Facebook has over 500 million users, half of whom log in at least once a day.[11] MySpace has 125 million monthly active users.[12] Twitter currently has more than 100 million users worldwide.[13] These sites offer their members the ability to connect and communicate with other members, including friends, relatives, colleagues, and the general public.[14]

Users of Facebook and MySpace create online profiles where they can post a photo of themselves, list contact information, school information, personal information, and post additional photo albums or personal blog posts.[15] Besides creating profiles and posting information, Facebook and MySpace users can also compile lists of friends that they can link to, post public comments on their profiles, and send private messages.[16] Users can also create groups of people with similar interests

10. *See Top Sites in United States*, ALEXA, http://www.alexa.com/topsites/countries/US (last visited Mar. 31, 2010).

11. *Press Room Statistics*, FACEBOOK, http://www.facebook.com/press/info.php?statistics (last visited Mar. 31, 2010).

12. *Press Room*, MYSPACE, http://www.myspace.com/pressroom?url=/fact+sheet (last visited Mar. 31, 2010).

13. *Twitter Snags over 100 Million Users, Eyes Money-Making*, ECON. TIMES, Apr. 15, 2010, http://economictimes.indiatimes.com/infotech/internet/Twitter-snags-over-100-million-users-eyes-money-making/articleshow/5808927.cms.

14. *Help Center, Find Your Friends*, FACEBOOK, http://www.facebook.com/help/?ref=pf#!/help/?guide (last visited Feb. 15, 2010) [hereinafter *Find Your Friends*].

15. *Help Center, Set Up a Profile*, FACEBOOK, http://www.facebook.com/help/?ref=pf#!/help/?guide=set_up_profile (last visited Feb. 15, 2010); *Help Center*, MYSPACE, http://faq.myspace.com/app/home (last visited Feb. 15, 2010).

16. *Find your Friends*, *supra* note 14; *Help Center, How do I find friends on MySpace?*, MYSPACE, (http://faq.myspace.com/app/answers/detail/a_id/56/kw/find%20friends/r_id/100061 (last

and announce events and invite people to these events.[17] Facebook and MySpace also have search functions, which allow users to look up other users by name or interests.[18] Until very recently, Facebook allowed its users to limit those who viewed their profiles by grouping users into networks based on affiliation with a school, region of the country or company.[19] At the end of 2009, Facebook removed this network-based privacy option and now only allows privacy settings based on "Friends," "Friends of Friends," and "Everyone."[20] In October 2010, the site created an additional feature that allows users to target their updates to specific sets of friends or "Groups," without posting the information to everyone in their network.[21] MySpace, in contrast, has no networks or inherent limitations on the viewing of profiles.

Facebook's photo sharing system is one of its most popular features. When users upload photos, they can click on a person in the photo, enter that person's name, and create a link to the "tagged" person's own profile.[22] This tagging system can be initiated by anyone on Facebook, even someone who does not know the user who originally uploaded the files.[23] Many of the activities on Facebook generate event notifications that are displayed in a general "News Feed" that is visible on all users' home pages. After the success of Facebook's photo tagging and News Feed systems, MySpace adopted similar features.

Twitter is slightly different than these two traditional SNSs. While the site allows users to maintain personal profiles and compile friend lists, the site's main component is its "microblogging" service, which

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visited Feb. 15, 2010).

17. *Help Center, How do I create a group?*, FACEBOOK, http://www.facebook.com/help/?guide=set_up_profile#!/help/?faq=13034 (last visited Feb. 15, 2010); *Help Center, How to use the Events application*, FACEBOOK, http://www.facebook.com/help/?guide=set_up_profile#!/help/?page=828 (last visited Feb. 15, 2010); *Help Center, How do you join, add and manage MySpace groups?*, MYSPACE, http://faq.myspace.com/app/answers/detail/a_id/202/kw/groups/r_id/100061 (last visited Feb. 15, 2010); *Help Center, How do you invite your friends to a party?*, MYSPACE, http://faq.myspace.com/app/answers/detail/a_id/296/kw/myspace%20events/r_id/100061 (last visited Feb. 15, 2010).

18. *Find your Friends*, *supra* note 14.

19. Paul McDonald, *Growing Beyond Regional Networks*, THE FACEBOOK BLOG (June 2, 2009, 4:14 PM), http://blog.facebook.com/blog.php?post=91242982130.

20. *A Guide to Privacy on Facebook,* FACEBOOK, http://www.facebook.com/privacy/explanation.php?ref=pf (last visited Nov. 23, 2010).

21. David Goldman, *Facebook Unveils New Groups Tool,* CNNMONEY.COM (Oct. 7, 2010, 9:05 AM ET), http://money.cnn.com/2010/10/06/technology/facebook_event.

22. *Help Center, Photos*, FACEBOOK, http://www.facebook.com/help/?guide=set_up_profile#!/help.php?page=830 (last visited Feb. 15, 2010).

23. *Help Center, How does tagging work? How do I remove a tag?*, FACEBOOK, http://www.facebook.com/help/?guide=set_up_profile#!/help/?faq=13407 (last visited Feb. 15, 2010).

enables users to send and read user messages called "tweets."[24] Tweets are text-based posts of up to 140 characters displayed on a user's profile page.[25] Tweets are publicly visible by default, but senders can restrict message delivery to only their friend list.[26] Users may also subscribe to other author tweets; this is known as "following."[27] The site proclaims: "Whether it's breaking news, a local traffic jam, a deal at your favorite shop or a funny pick-me-up from a friend, Twitter keeps you informed with what matters most to you today."[28]

II. THE LAW GOVERNING ONLINE PRIVACY IN THE UNITED STATES IS LESS THAN CLEAR

More than forty years ago, the Supreme Court acknowledged that "[t]he law, though jealous of individual privacy, has not kept pace with recent advances in scientific knowledge."[29] Today, with the advent of the Internet, GPS tracking devices and mobile communications, this observation holds true more than ever before. In the words of privacy scholar Professor Daniel J. Solove:

> Privacy is far too vague a concept to guide adjudication and lawmaking, as abstract incantations of the importance of "privacy" do not fare well when pitted against more concretely stated countervailing interests. . . . [I]nformation privacy is significantly more vast and complex, extending to Fourth Amendment law, the constitutional right to information privacy, evidentiary privileges, dozens of federal privacy statutes, and hundreds of state statutes.[30]

This section will explore some of the current laws that govern privacy on the Internet.

A. The Fourth Amendment

Under modern privacy law, a communication medium or platform is

24. *About Tweets #New Twitter*, TWITTER, http://support.twitter.com/groups/31-twitter-basics/topics/146-new-twitter/articles/221118-about-tweets-newtwitter (last visited Sept. 25, 2010).

25. *Id.*

26. *About Private Messages (Direct Messages) #New Twitter,* TWITTER, http://support.twitter.com/groups/31-twitter-basics/topics/146-new-twitter/articles/219981-about-private-messages-direct-messages-newtwitter (last visited Sept. 25, 2010).

27. *How to Follow Others #New Twitter*, TWITTER, http://support.twitter.com/groups/31-twitter-basics/topics/146-new-twitter/articles/226649-how-to-follow-others-newtwitter (last visited Sept. 25, 2010).

28. *About*, TWITTER, http://twitter.com/about (last visited Sept. 26, 2010).

29. Berger v. New York, 388 U.S. 41, 49 (1967).

30. Daniel J. Solove, *A Taxonomy of Privacy,* 154 U. PA. L. REV. 477, 478 (2006).

not vested with Fourth Amendment[31] protection unless the user has a reasonable expectation of privacy therein. This is a twofold requirement, set out in Justice Harlan's concurrence in the seminal case *Katz v. United States,* which requires, first, that a person have an actual subjective expectation of privacy and, second, that the expectation is one that society is prepared to recognize as reasonable.[32] If both prongs are met, the government must acquire a warrant with its corresponding probable cause requirement to search the protected area or information.[33] This inquiry, which delves into the objective reasonableness of an expectation of privacy, is based on precedent from previous rulings. However, the Supreme Court has yet to tackle the issue of Fourth Amendment privacy in cyberspace. Thus, courts have had to draw analogies to previous non-cyberspace rulings.[34]

In *Smith v. Maryland,* the Supreme Court held that the defendant had no subjective expectation of privacy in a search conducted by a pen register, a device installed by telephone companies that can track the dialed phone numbers for outgoing calls.[35] The Court stated that telephone users must realize that they "convey" phone numbers to the telephone company because they see a list of their calls on their monthly bills.[36] The Court also noted that pen registers do not "acquire the *contents* of communications,"[37] paving the way for the content/non-content distinction followed today.[38] When applied to Internet communications, there is a lesser expectation of privacy in e-mail addresses, IP addresses, and URLs because these are likened to non-content telephone numbers.[39]

In *United States v. Miller*, the Supreme Court held that there was no

31. "The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized." U.S. Const. amend. IV.

32. 389 U.S. 347, 361 (1967) (Harlan J., concurring).

33. *Id.* at 357.

34. Ric Simmons, *From Katz to Kyllo: A Blueprint for Adapting the Fourth Amendment to Twenty-First Century Technologies*, 53 HASTINGS L.J. 1303, 1322 (2002); *see, e.g.* United States v. Maxwell, 45 M.J. 406, 417-18 (C.A.A.F. 1996) (comparing e-mails to first-class mail and phone calls and distinguishing them from the open Internet).

35. 442 U.S. 735, 742 (1979).

36. *Id.*

37. *Id.* at 741 (emphasis in original).

38. This standard distinguishes "content" information, which conveys the substance, purport, or meaning of the communications from "non-content" information, which conveys dialing or routing information. Thus, for a phone call, the phone number dialed to initiate the call is non-content information and the actual ensuing conversation, namely the words spoken, is the content information. *See id.* at 743.

39. Orin S. Kerr, *Applying the Fourth Amendment to the Internet: A General Approach*, 62 STAN. L. REV. 1005, 1027-28 (2010).

protected Fourth Amendment interest in a person's bank records.[40] The Court supported this holding by stating that such documents "contain only information voluntarily conveyed to the banks and exposed to their employees in the ordinary course of business."[41] Further, it stated, "[a person] takes the risk, in revealing his affairs to another, that the information will be conveyed by that person to the Government."[42] Thus, *Miller* solidified *Smith*'s dicta suggesting that records and documents handed over to third parties are stripped of their Fourth Amendment protections.

Finally, relying on *Katz,* the Supreme Court held in *California v. Ciraolo* that the mere possibility of exposure to the public eye diminishes and sometimes obviates the individual's privacy expectation.[43] However, if someone "seals" or takes precautions to protect their information, this creates a reasonable expectation of privacy.[44]

In applying the two-pronged "legitimate expectation of privacy" test to SNSs, there is clearly a range of analyses. The subjective and objective expectations of privacy are different for a default MySpace profile that can be viewed by anyone on the Web and a profile that has been set to the highest "private" settings afforded by the SNS provider.[45] However, even in the latter category, the inherent nature of an SNS profile's everyday use works against the notion of privacy expectations. By signing on to an SNS and providing personal information for friends to see, users make a choice to publicize this information to others. Furthermore, unlike postal mail or bank accounts, there is no substantial need to have a profile on an SNS to participate in society. Thus, an aggressive investigator can always argue that an SNS profile is better compared to a yearbook, directory, or bulletin board rather than a piece of mail or a closed container, and thus find that any information posted on a profile, be it photos, bulletins, or wall posts, holds no protection under the Fourth Amendment.

B. The Electronic Communications Privacy Act

After the Supreme Court provided a very narrow view of privacy

40. 425 U.S. 435, 440 (1976).

41. *Id.* at 442.

42. *Id.* at 443.

43. 476 U.S. 207, 213 (1986) ("What a person knowingly exposes to the public, even in his home or office, is not a subject of Fourth Amendment protection." (quoting *Katz,* 389 U.S. at 351)).

44. *United States v. Jacobsen*, 466 U.S. 109, 114 (1984) ("[S]ealed packages are in the general class of effects in which the public at large has a legitimate expectation of privacy . . . .").

45. *See* Matthew J. Hodge, *The Fourth Amendment and Privacy Issues on the "New" Internet: Facebook.com and MySpace.com,* 31 S. ILL. U. L. J. 95, 106-17 (2006).

rights under the Fourth Amendment in *Smith* and *Miller*, Congress enacted legislation partly superseding these decisions.[46] The Federal Wiretap Act was first enacted in 1968 to regulate telephone wiretaps and hidden microphones.[47] In 1986, Congress amended the Federal Wiretap Act to include electronic communications by enacting the Electronic Communications Privacy Act ("ECPA").[48] This set of statutory privacy laws supplements the Fourth Amendment and regulates the collection of digital evidence stored and transmitted on computer networks.

The portion of the ECPA that compels the production of stored communications and records, the Stored Communications Act ("SCA"), applies only to providers of "electronic communication services" ("ECS") and providers of "remote computing services" ("RCS"). The ECPA defines the former as "any service which provides to users thereof the ability to send or receive wire or electronic communications" and defines these provider's storage capabilities as "any temporary, intermediate storage of wire or electronic communication incidental to the electronic transmission thereof."[49] The latter category of provider is defined as "the provision to the public of computer storage or processing services by means of an electronic communications system."[50]

If these two categories seem foreign or obsolete, this is because many of the statute's definitions of electronic communications are based upon the existing technologies of 1986. The RCS category is especially indicative of the networks of yesteryear. In the past, computer processing power and storage capabilities were at a premium, and users would pay to have remote computers store extra files or process data. Today, a simple spreadsheet program can accomplish the tasks of the "remote computing service" providers of the late-'80s.[51] Further, the network service providers of today are multifunctional, providing communication services in some contexts, storage and processing in others, and important privacy-implicating services that fall into neither category.[52] However,

46. *See, e.g.* 12 U.S.C. § 3405 (2006) (requiring that financial records be relevant to a "legitimate law enforcement inquiry" and that a copy of the summons be served on the customer before government can access the records); 18 U.S.C. § 3121 (2006) (requiring a court order before use of pen registers).

47. Omnibus Crime Control and Safe Streets Act of 1968, 18 U.S.C. §§ 2510-2520 (2006).

48. Electronic Communication Privacy Act of 1986, Pub. L. No. 99-508, 100 Stat. 1848 (codified as amended in scattered sections of 18 U.S.C.).

49. 18 U.S.C. § 2510(17)(A).

50. 18 U.S.C. § 2711(2).

51. For example, the Microsoft software spreadsheet product "Excel" can accomplish such tasks.

52. *See e.g.*, Quon v. Arch Wireless Operating Co., 529 F.3d 892, 900-03 (9th Cir. 2008), *rev'd on other grounds sub nom.* City of Ontario v. Quon, 130 S. Ct. 2619 (2010) (holding that, for the purpose of archived messages, the provider of a text messaging service was an ECS, not an RCS, and therefore violated the SCA when it released transcripts of text

the statutory distinction remains significant because a remote computing service can release communications only with the consent of the subscriber, while an electronic communication service must obtain the consent of "the originator or an addressee or intended recipient of such communication."[53] Additionally, some communications mediums fall outside the scope of the SCA altogether, and they are thus afforded only traditional Fourth Amendment privacy protections.[54]

Facebook receives 10-20 law enforcement requests per day.[55] Many of these are in the form of general court-ordered subpoenas.[56] However, some of these requests are brought under ECPA because Facebook is a public network service provider.[57]

The SCA[58] is the main statutory source that aids government investigators and prosecutors in obtaining information from SNSs that is not readily available on the Web.[59] Through the SCA, government investigators can compel MySpace and Facebook to turn over logs of the times and dates that their users have logged into the network via a § 2703(d) court order.[60] A § 2703(d) court order requires only that the government show "specific and articulable facts showing that there are reasonable grounds to believe" that the logs are "relevant and material to an ongoing criminal investigation," a far lesser showing than a standard warrant's probable cause and particularity requirements under the Fourth

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messages).

53. 18 U.S.C. § 2702(b)(3).

54. *See e.g.,* In re Jetblue Airways Corp. Privacy Litig., 379 F. Supp. 2d 299, 307-10 (E.D.N.Y. 2005) (holding that JetBlue did not violate the SCA when it disclosed data from its passenger reservation system because JetBlue was neither an ECS, in merely transmitting data to customers to offer its traditional products and services over the Internet rather than providing Internet access itself, nor an RCS, in provided neither computer processing services or computer storage to the public).

55. Mark Howtinson, Deputy Gen. Counsel, Facebook, Panel comments at UC Berkeley School of Law Conference on Social Networks: Friends or Foes? Confronting Online Legal and Ethical Issues in the Age of Social Networking: Does Overt Access to Social Networking Data Constitute Spying or Searching? (Oct. 23, 2009) http://www.law.berkeley.edu/7458.htm.

56. *Id.*

57. James Aquilina, Exec. Managing Dir. and Deputy Gen. Counsel, Stroz Friedberg, Panel comments at UC Berkeley School of Law Conference on Social Networks: Friends or Foes? Confronting Online Legal and Ethical Issues in the Age of Social Networking: Does Overt Access to Social Networking Data Constitute Spying or Searching? (Oct. 23, 2009) http://www.law.berkeley.edu/7458.htm.

58. 18 U.S.C. §§ 2701-11.

59. Conference on Social Networks: Friends or Foes? Confronting Online Legal and Ethical Issues in the Age of Social Networking, held by UC Berkeley School of Law (Oct. 23, 2009), *available at* http://www.law.berkeley.edu/7458.htm.

60. Each of these logs is called a "session ID." A session ID is a unique number that a website's server assigns a specific user for the duration of that user's visit. Session IDs allow websites to confirm that users are logged in and identify the user across multiple Web page requests. *See Session ID*, WIKIPEDIA, http://en.wikipedia.org/wiki/Session_ID (last visited Feb. 15, 2010). The process for a § 2703(d) court order is described at 18 U.S.C. § 2703(d).

Amendment. This lesser standard reflects the content/non-content distinction.

Government investigators and prosecutors can compel SNSs to turn over content through a warrant under § 2703(a).[61] Content is defined as "any information concerning the substance, purport, or meaning of that communication."[62] A § 2703(a) warrant is "issued using the procedures describe in the Federal Rules of Criminal Procedure," and thus requires (1) probable cause that evidence of a crime will be found on the SNS and must also (2) describe the place to be searched and the information sought with particularity.

There are arguments that the SCA does not apply to Facebook at all, particularly with regard to the information stored on a user's profile page. The statute applies only to communications *incidentally* in storage for transmission by an ECS, or files held solely for computer processing or storage by an RCS. Thus, certain communications on SNSs may not fit any of these categories.[63]

Facebook advertises itself as a "social utility," a description that encompasses its many functions including private user-to-user messages, photo albums, status updates, user applications and more.[64] Since the ECPA is applied on a communication-by-communication basis, each Facebook function must be analyzed separately to determine what processes may be available to compel disclosure under the statute. Facebook's chat and user-to-user messaging functions are clearly analogous to e-mail and instant messaging, and they probably fall under ECS.[65] Facebook's user-to-user wall post function is also a medium for two-way communication like chats and e-mails.[66] However, wall posts can be viewed by third parties, which arguably affect the amount of privacy that is expected in such communications. Does this affect the function's classification under the SCA? Facebook status updates are a one-way means for a user to alert all his or her friends at once.[67] This

61. 18 U.S.C. § 2703(a) ("A governmental entity may require the disclosure by a provider of electronic communication service of the contents of a wire or electronic communication. . . only pursuant to a warrant issued using the procedures described in the Federal Rules of Criminal Procedure. . .").

62. 18 U.S.C. § 2510(8).

63. *See, e.g., In re* JetBlue Airways Corp. Privacy Litig., 379 F. Supp. 2d 299 (E.D.N.Y. 2005) (where an airline's passenger reservation system was found to be neither an RCS nor an ECS).

64. *Factsheet*, FACEBOOK, http://www.facebook.com/press/info.php?factsheet (last visited Feb. 15, 2010).

65. *Help Center, How to use the Chat feature,* FACEBOOK, http://www.facebook.com/help/?ref=pf#!/help.php?page=824 (last visited Feb. 15, 2010).

66. *Help Center, How to use the Wall and Wall privacy*, FACEBOOK, http://www.facebook.com/help/?ref=pf#!/help/?page=820 (last visited Feb. 15, 2010).

67. *Help Center, Status*, FACEBOOK, http://www.facebook.com/help/?ref=pf#!/help/?page=706 (last visited Feb. 15, 2010).

appears to fall outside the scope of ECS, being more like a traditional website that imparts information to an audience, such as a news site like CNN.com or a blog. However, Facebook allows a user's friends to leave comments under these status updates. Thus, these status updates are similar to both a publicly-viewable chat that would not be covered under the SCA, and also private e-mail chains that would be protected by the SCA.

There is a valid argument that Facebook's photo sharing function is an RCS because users can store their photos on the website instead of on their personal hard drives. But, is the purpose of the user to use Facebook as such, or is the purpose of the user to upload photos in order to share them and publicize their own activities? For status updates, if a user regularly employs this function their profile will soon contain a long string of information about a user's activities or thoughts and feelings. This could render Facebook an RCS because it is storing these tidbits in one place, similar to a diary or journal. However, most Facebook users probably do not intend their collection of status updates and wall posts to be a diary and may rarely click through their old posts. Thus, their motive is not to use Facebook as a "computer storage or processing service." Similarly, a user does not place his personal work, relationship, hobby, and contact information on Facebook to store it there, but to share it with others on the website. Thus, while it is a form of communication, this personal information seems to fall outside the scope of ECS and RCS.

Despite these arguments, Facebook itself has generally acquiesced to any orders or warrants that appear to be valid.[68] The battle Facebook has chosen to fight is over the scope of content and non-content information. The company has also recognized that its users' expectations of privacy are not easy to define and that its exhaustive privacy policy does not protect itself from user outrage when privacy appears to have been breached.[69] In the spring of 2010, Facebook faced a user backlash after it announced its new "partner"-site information-sharing feature, prompting some to call for a "Quit Facebook Day."[70] Thus, as a legal strategy and publicity tool Facebook has adopted a policy that defines "content" extremely broadly. It also publicly rebukes any

68. Howtinson, *supra* note 55.

69. Juan Carlos Perez, *Facebook's Beacon More Intrusive than Previously Thought*, PC WORLD (Nov. 30, 2007, 4:10 PM), http://www.pcworld.com/article/140182/facebooks_beacon_more_intrusive_than_previously_thought.html.

70. *See Privacy Backlash*, *supra* note 3; *see also Why 'Quit Facebook Day' Failed: 3 Theories*, THE WEEK (June 1, 2010, 11:11 AM), http://theweek.com/article/index/203554/why-quit-facebook-day-failed-3-theories ("Quit Facebook Day," scheduled for May 31, 2010, was largely a failure.).

attempts to obtain such information through a non-warrant process.[71]

C. *The Inherent Privacy Risks of Social Networking*

Facebook and MySpace hold an incredible amount of information about their users. A fully-completed Facebook profile contains a wealth of personal information: name, gender, sexual preference, birthday, political and religious views, relationship status, educational and employment history, and more. Wall posts can contain information about the posting user ("Thanks for helping me out with my car the other day."), the receiving user ("Hungover? You were crazy last night!!"), or both. Uploaded and tagged photos document what a user looks like, places they have been, and things they do. A photo also connects those pictured together in the image and connects the people in the photo with the user who uploaded the image.[72] Further, Facebook offers many tools that allow a user to search out other profiles and potential contacts.

SNSs allow users to restrict access to their profile to only allow those who they accept as "friends" to view their profile.[73] This setting is not the default for either MySpace or Facebook; users must take an active step to turn it on.[74] There is a strong argument however, that even this step should not overcome the presumption that by posting information on a profile, users should not actually expect privacy because they are sharing information with numerous other third parties.[75] This argument implicates the limitation on privacy expectations set forth in *Miller*.[76] Even a profile set to private can be readily accessed by hundreds of individuals: the user's "friends."[77] Thus, a user should have no legal recourse if one of these "friends" shares his information in a way that is later used by an attorney during trial.

When a single entity collects and controls so much personal data, it raises a host of privacy concerns because of the potential that such data could be misused. However, most of the personal data on an SNS exists because of the initiative of users (control) and is based upon their

71. 18 U.S.C. § 2702(b)(3) (2006).

72. *See supra* discussion accompanying note 23 on tagging.

73. *See, e.g., Help Center, Privacy: Update to Privacy Settings*, FACEBOOK, http://www.facebook.com/help/?ref=pf#!/help.php?page=927 (last visited Feb. 15, 2010).

74. *See, e.g., Help, Control Privacy on MySpace Profile*, MYSPACE, http://faq.myspace.com/app/answers/detail/a_id/288/session/L3NpZC9ZS1Q1cWdZag%3D%3D (last visited Mar. 31, 2010).

75. Hodge, *supra* note 45, at 111.

76. *Miller*, 425 U.S. at 443. This idea is referred to as the "third-party doctrine." Namely, by disclosing information to a third party, an individual gives up all his privacy rights in the information revealed.

77. The average number of "friends" for a Facebook user is 130, however, some users have more than 1,000, all of which have access to the user's profile information, *see Press Room Statistics*, *supra* note 11.

consent. The idea of privacy as a form of *consent* and *control* is echoed by many privacy scholars.[78] SNSs provide a valuable, flexible and completely voluntary social tool. Users log onto SNSs because they want to share their information and access information others want to share.[79] Thus, in exchange for using this tool, SNS users should accept the inherent risks that may be involved.

The burden of protecting all the information a user posts cannot be placed on SNS providers or the government alone. One reason for this is that most SNS users do not define their privacy expectations based on constitutional or statutory legal principles, but in terms of social and societal roles. In the words of Professor James Grimmelmann of New York Law School, "users think socially, not logically."[80] Thus, the biggest privacy breaches relating to SNSs are those that involve peer-produced privacy violations, e.g. when a user's "friend" discloses private information to an unauthorized third party or posts an unflattering photograph or a photograph that depicts the user engaging in unsavory behavior.[81]

Neither SNS providers nor the government have any way to protect users against these kinds of violations. Indeed, in response to the Spring 2010 backlash, Facebook CEO Mark Zuckerberg stated that Facebook's obligation was merely to reflect "current social norms" that favored "exposure over privacy."[82] SNS users may assume that social norms against snooping and sharing will place limits on how far the information they post will spread, but they should not reasonably expect that every "friend" will respect or even be able to recognize another's privacy interests. Additionally, it is not easy to uniquely associate each piece of information with one person. For example, a photograph may be taken by one individual, but depict a set of other individuals. Here, based on social norms alone, it becomes hard to understand who should control the distribution of the photograph. Whoever has control over the information can use it in ways that others with a legitimate interest in it do not like.

Facebook has done its best to warn users of these privacy risks through its detailed and thorough privacy policy.[83] Despite this, most

78. *See, e.g.*, DANIEL SOLOVE & PAUL SCHWARTZ, PRIVACY, INFORMATION, AND TECHNOLOGY (2009).

79. *See Principles*, FACEBOOK, http://www.facebook.com/policy.php (last visited Feb. 15, 2010).

80. James Grimmelmann, *Saving Facebook,* 94 IOWA L. REV. 1137, 1206 (2009).

81. For example, someone blackmailed Miss New Jersey 2007 by sending racy pictures from a private Facebook album to pageant officials. Austin Fenner, *N.J. Miss in a Fix over Her Pics*, N.Y. POST, July 6, 2007, at 5.

82. *See* Jeffrey Rosen, *The Web Means the End of Forgetting,* N.Y. TIMES, July 21, 2010, at MM30.

83. Facebook's privacy policy, revised April 22, 2010, is 5,830 words long and disclaims

users still expect some amount of privacy on Facebook because they assume their "friends" will respect privacy bounds similar to those offline. A college student does not expect his fraternity brothers to hand over photos from last weekend's kegger to school administrators or the dean.[84] However, such risks are present in cyberspace just as much as in the real world, and the burden can only be placed on the individual to carefully asses what information he puts on his SNS profile and monitor what others do with this information.

Accordingly, the most supportive argument behind the defense attorney's use of undercover investigative techniques on SNSs is the idea that disclosure on these sites is done at the user's own risk. This notion stems from the ideas behind the third party doctrine first set forth in *Miller*. It also stems in part from the Sixth Circuit's conclusion in *Guest v. Leis*[85] that "[u]sers would logically lack a legitimate expectation of privacy in the materials intended for publication or public posting."[86] Thus, the method of undercover investigating proposed in this note has nothing to do with circumventing SNS technologies or breaking website code. Rather, the investigative techniques outlined here mirror those that take advantage of what users choose to post on their SNS profiles and the social relationships that control how this information is shared. Many of these techniques are supported by the third-party doctrine and are routinely used and approved of outside of cyberspace in the real world.[87]

III. CRIMINAL DISCOVERY AND LEGAL ETHICS

This section provides an overview of the rules and standards of both criminal discovery and legal ethics. It will show that the policy goals behind both these areas indicate that information on a social networking

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responsibility for various privacy breaches quite explicitly:

> Although we allow you to set privacy options that limit access to your information, please be aware that no security measures are perfect or impenetrable. We cannot control the actions of other users with whom you share your information. We cannot guarantee that only authorized persons will view your information. We cannot ensure that information you share on Facebook will not become publicly available. We are not responsible for third party circumvention of any privacy settings or security measures on Facebook.

Privacy Policy, FACEBOOK, http://www.facebook.com/policy.php (last visited Mar. 31, 2010).

84. *See* Jodi S. Cohen, *Cop Snares College Pals in Own Web*, CHI. TRIB., Aug. 3, 2006, at C1 (A University of Illinois at Urbana-Champaign student was caught publicly urinating by a police officer. The student ran away but the officer was able to question another student at the scene. The officer later logged on to Facebook and recognized the fleeing student on the other student's profile. He ticketed both of them.).

85. 255 F.3d 325 (6th Cir. 2001).

86. *Id.* at 333.

87. *See infra* Part III.C for specific examples.

site should be available to the government and the defendant alike.

A. The Rules of Criminal Procedure

There has always been inequality in the access of information given to prosecutors and defense attorneys under the Federal Rules of Criminal Procedure. For example, under Rule 16, prosecutors are not required to give their opposing counsel police reports or the names of witnesses.[88] Also, when conducting their investigations, prosecutors can subpoena documents and records relevant to the case, can acquire tangible and verbal evidence from court-ordered searches and electronic eavesdropping, and can obtain forensic proof from well-staffed and experienced crime laboratories.[89] In contrast, the defendant's ability to acquire almost all of this information is severely limited.[90]

There are many reasons for this distinction, and the reasons are still highly debated. Critics of broad criminal discovery argue that such practices would facilitate perjured defense testimony and the intimidation of witnesses, and would favor the accused because the privilege against self-incrimination protects defendants from reciprocal disclosures.[91] Further, critics of broad criminal discovery point to the fact that the prosecutor carries a high burden of proof: "beyond a reasonable doubt." On the other side, advocates of broader criminal discovery argue that a trial should be a search for truth and the truth is more likely to emerge when each side is equipped with all relevant information about the case (similar arguments have largely been accepted as applied to civil discovery).[92] However, proponents argue that expanded discovery is necessary in order to offset the substantial advantages possessed by the prosecution in its investigation of crime. Advocates of broader criminal discovery also argue that there may be a fundamental conflict of interest between a prosecutor's personal motivation to advance his or her career based on successful convictions and a prosecutor's role as a quasi-judicial official seeking justice in the name of the state.[93] Allowing criminal defendants to access more information for trial could ease the tension between these dual roles.

Starting in the 1970s, prosecutors began to wield increasingly more power as crime became more complex and sophisticated (narcotics trafficking, racketeering, business fraud) and as policies emphasized the

88. FED. R. CRIM. P. 16.

89. Bennett L. Gershman, *The New Prosecutors,* 53 U. PITT. L. REV. 393, 449 (1992).

90. *Id.*

91. *See* State v. Tune, 98 A.2d 881 (N.J. 1953).

92. United States v. Proctor & Gamble Co., 356 U.S. 677, 682 (1958).

93. Stanley Z. Fisher, *In Search of the Virtuous Prosecutor: A Conceptual Framework,* 15 AM. J. CRIM. L. 197, 198-202 (1988).

"war on crime" over an individual's due process rights during investigations.[94] The prosecutor has always had a significant role in the early stages of a case, but today he or she may develop and coordinate the key strategies in a criminal investigation.[95] Also, prosecutors are afforded full discretion in bringing charges and are largely immune from judicial review under the presumption that they will act in good faith.[96] Likewise, prosecutors can obtain the cooperation of key witnesses through grants of immunity,[97] and the federal sentencing guidelines give them greater leverage to either compel plea bargaining or force cooperation.[98]

Prosecutors can apply for authorization to obtain eavesdropping and surveillance warrants and subpoena records.[99] Also, in 1994, the Department of Justice and Federal Bureau of Investigation successfully lobbied Congress to enact the Communications Assistance for Law Enforcement Act,[100] obligating Internet service providers to configure their networks to be able to quickly assist law enforcement monitoring. Additionally, a host of other legislation provides the prosecutor with new definitions of crimes and new ways to investigate them, including the Racketeer Influenced and Corrupt Organizations Act,[101] Continuing Criminal Enterprises Act[102], Criminal Forfeitures Act,[103] Money Laundering Act,[104] Comprehensive Thrift and Bank Fraud Act,[105] and of course, the ECPA. Also, the Supreme Court has narrowed the scope of the exclusionary rule, allowing more evidence to be presented at trial.[106] The ECPA does not even have an exclusionary remedy for when its provisions have been violated. Finally, prosecutors have been allowed to use deceptive, undercover techniques to acquire evidence of crime, despite ethical rules barring lawyers from engaging in "dishonesty, fraud,

94. Charles H. Whitebread, *The Burger Court's Counter-Revolution in Criminal Procedure: The Recent Criminal Decisions of the United States Supreme Court,* 24 WASHBURN L.J. 471, 471 (1985).

95. Gershman, *supra* note 89, at 395.

96. *See* Imbler v. Pachtner, 424 U.S. 409, 430 (1976); *see also* Burns v. Reed, 500 U.S. 478, 487 (1991) (both holding that a prosecutor is absolutely immune from civil liability for charging excesses).

97. Gershman, *supra* note 89, at 395.

98. *Id.* at 418-19.

99. *Id.* at 395.

100. Communications Assistance for Law Enforcement Act of 1994, Pub. L. No. 103-414, 108 Stat. 4279 (codified as amended at 47 U.S.C. §§1001-1010 (2006)).

101. 18 U.S.C. §§ 1961-68 (2009).

102. 21 U.S.C. § 848 (2008).

103. 21 U.S.C. § 853 (2009).

104. 18 U.S.C. § 1956.

105. 18 U.S.C § 1001.

106. *See* United States v. Leon, 468 U.S. 897 (1984) (Court created the "good faith" exception to the exclusionary rule); *see also* New York v. Quarles, 467 U.S. 649 (1984) (Court created "public safety" exception to the requirement that Miranda warnings be given before questioning; defendant's incriminating statements were admissible).

deceit, or misrepresentation."[107] Through this combination of broad investigative powers, narrowing of the exclusionary rule, and ability to set up elaborate undercover operations, many commentators have noted that the inherent inequality between the prosecutor and defendant has made the adversary system severely lopsided.[108]

An attorney's use of an SNS involves the control of and access to information, whether it is used as evidence itself, or whether it merely provides a lead to obtain other evidence. In contrast to a prosecutor's broad array of tools and strategies to obtain information from an SNS provided under the ECPA, the defense attorney has no statutory right to access to most of the prosecutors "data-gathering machinery."[109]

Under the Federal Rules of Criminal Procedure, the defense is entitled to any statements made by the defendant, the defendant's prior record, reports of examinations and tests, and statements made by expert witnesses.[110] Further, a prosecutor must turn over any materials that consist of exculpatory or impeaching information material to the guilt or innocence or to the punishment of a defendant.[111]

A defendant may obtain documents and other physical records through a *subpoena duces tecum.* In federal court, these are governed by Rule 17 of the Rules of Criminal Procedure.[112] Certain materials unrelated to the prosecution's criminal investigation or not otherwise subject to the discovery limitations imposed by Rule 16(a)(2) may be subpoenaed without a motion or corresponding court order.[113] Ex parte procedure is usually permissible.[114] If a court order is required, the movant must show that (a) the material sought is evidentiary and relevant; (b) the material is not otherwise procurable reasonably in advance of trial by exercise of due diligence; (c) that the party cannot properly prepare for trial without such production and inspection in advance of trial and that the failure to obtain such inspection might tend unreasonably to delay trial; (d) that the application is made in good faith and is not intended as a general "fishing expedition."

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107. MODEL R. OF PROF'L CONDUCT R. 8.4(c) (2010); *see also* United States v. Russell, 411 U.S. 423, 432 (1973).

108. Gershman, *supra* note 89; *see also* State v. Rummer, 432 S.E. 2d 39, 70 (W. Va. 1993) (Neely, J., dissenting) ("Today, prosecutors have more power and less judicial supervision than ever before. Today's prosecutors are like the sheriffs of the old wild west: they are the law.")

109. Gershman, *supra* note 89, at 449.

110. FED. R. CRIM. P. 16(b).

111. Brady v. Maryland, 373 U.S. 83 (1963) (where the Supreme Court held that that suppression by the prosecution of evidence favorable to a defendant who has requested it violates due process).

112. FED. R. CRIM. P. 17.

113. INGA L. PARSONS, FOURTH AMENDMENT PRACTICE AND PROCEDURE 261 (2004).

114. *See, e.g.* United States v. Reyes, 162 F.R.D 468, 471 (S.D.N.Y. 1995).

A defense attorney may thus try to obtain information from an SNS by serving the site provider with a subpoena. However, the SNS provider may resist turning over the information by bringing a motion to quash, supported by arguments that constitutional or federal law prohibits divulging the requested information. Such was the case in September 2009 when Facebook pages were subpoenaed by the State of Virginia's Workers Compensation Commission in regard to a worker's compensation dispute.[115] The subpoena requested, "all documents, electronic or otherwise, related directly or indirectly, to all activities, writings, photos, comments, e-mails, and/or postings" on the Facebook account. Facebook resisted the subpoena, saying that the request must come from a California court, and that it was "overly broad" because the ECPA protected the privacy of user accounts.[116] The Commission backed off and stopped levying its $200-a-day fine before the issue was fully litigated before a court.[117]

A defense attorney armed with a subpoena may easily run into similar problems when seeking information from an SNS, particularly under Facebook's broad definition of which user data falls under "content" under the ECPA. Also, a defense attorney would not have the additional processes afforded to prosecutors under the SCA, namely the § 2703(d) court order or the § 2703(a) warrant. Finally, although prosecutors are required to turn over exculpatory evidence under *Brady,*[118] a prosecutor has neither the motive nor the time to do a defense attorney's work by coming up with various theories of defense and providing SNS information that may form the bases for these theories.

A defendant seeking to compel an SNS to turn over content information could potentially rely on cooperation from the prosecutor. Many prosecutors divulge information beyond what is required under the Rules because it will assist the defense attorney in counseling his or her client on whether to accept a plea offer or take the case to trial.[119] In this vein, a defendant may ask a prosecutor to obtain a § 2703(a) warrant or a regular warrant on his or her behalf. The prosecutor may give in to the request. However, in order to access most of the content on an SNS profile under § 2703(a), the warrant would need to establish probable cause that a user's SNS profile page has evidence *of the crime.* As discussed before, the variety of information that an SNS profile can harbor means that it can contain evidence beyond mere evidence of a

115. Declan McCullagh, *Facebook fights Virginia's demand for user data, photos*, CNET NEWS (Sept. 14, 2009, 4:34 PM PDT), http://news.cnet.com/8301-13578_3-10352587-38.html.

116. *Id.*

117. *Id.*

118. Brady v. Maryland, 373 U.S. 83, 85-87 (1963).

119. PARSONS, *supra* note 113, at 256.

crime. A comment posted on a Facebook wall or a photograph buried in a "Spring Break 2008" photo album could be the key in a defendant's case.[120]

Most importantly, even where prosecutors are required to disclose evidence, many may be entrenched in their own biased analysis of the facts and risk assessment. Evidence that may be deemed exculpatory by a defense lawyer may not be disclosed because the prosecutor has already concluded which evidence is "material" based upon her own theory of the case. Further, many prosecutors' offices carry a heavy caseload. In the context of SNS investigations, it is unreasonable to require a prosecutor to research not only his side of the case, but to use the SCA to uncover any bit of relevant information that might help a defense attorney explore a myriad of theories of defense. Consequently, a defense attorney cannot rely on the prosecutor to turn over important or relevant content information gleaned from SNSs and must be allowed to access such information through his own investigations.

B. Legal Ethics

In the realm of legal ethics, all states have adopted rules of professional conduct for lawyers similar to the standards promulgated by the American Bar Association in its Model Rules of Professional Conduct.[121] Lawyers who violate these rules are subject to sanctions before the disciplinary committee within their jurisdictions.[122] Further, most jurisdictions have adopted a version of the Model Rules 3.8 titled "Special Responsibilities of a Prosecutor."[123] However, the vast majority of reported decisions of lawyer discipline are cases involving solo practitioners or practitioners in small firms.[124] Many scholars and commentators have noted that there is an astonishing absence from appellate court decisions or reports by disciplinary committees of any cases dealing with misconduct by prosecutors.[125] This is particularly notable after the work of organizations such as the Innocence Project, which have conducted groundbreaking work in the use of post-

120. *See, e.g.*, Damiano Beltrami, *His Facebook Status Now? 'Charges Dropped'*, N.Y. TIMES (Nov. 11, 2009, 11:10 AM), http://fort-greene.blogs.nytimes.com/2009/11/11/his-facebook-status-now-charges-dropped.

121. Ellen Yaroshefsky, *Wrongful Convictions: It Is Time to Take Prosecution Discipline Seriously,* 8 UDC/DCSL L. REV. 275, 276 (2004).

122. *Id.*

123. *See* MODEL R. OF PROF'L CONDUCT R. 3.8 (2006) (This rule outlines the duty to charge only on the basis of probable cause and the obligation to disclose exculpatory evidence.).

124. *Id.*

125. *See, e.g.*, Gershman, *supra* note 89, at 449; Yaroshefsky, *supra* note 121, at 277; Fred C. Zacharias, *The Professional Discipline of Prosecutors,* 79 N.C. L. REV. 721, 745 n.84 (2001); United States v. Acosta, 111 F. Supp. 2d 1082, 1093-1094 (E.D. Wis. 2000).

conviction DNA testing to exonerate the wrongfully convicted and tied prosecutorial misconduct to many of these wrongful convictions.[126]

With no access to warrants or court orders, a defense attorney may think he can access private SNS profile information by becoming a "friend" of the profile owner. He may also want to ask a third person whose name the individual may not recognize to go to the SNS website, contact the profile owner and seek to "friend" her to obtain access to the private information. In March 2009, the Philadelphia Bar Association Professional Guidance Committee addressed these situations.[127] It was one of the first ethics committee opinions regarding SNSs. The committee took a conservative approach, stating that the aforementioned investigative techniques would violate Model Rule 8.4(c), which prohibits a lawyer from engaging in conduct that involves "dishonesty, fraud, deceit or misrepresentation."[128] The techniques were also found to violate Model Rule 4.1, which prohibits the making of false statements of material fact or law to a third person in the course of representing a client. The Committee reasoned the techniques were "deceptive" and "omit[ted] a highly material fact, namely, that the third party who asks to be allowed access to the witness's [profile] pages is doing so only because he or she is intent on obtaining information and sharing it with a lawyer . . . ."[129]

Many other courts and authors who have commented on misrepresentations by lawyers or their investigators have assumed, like the Philadelphia Bar, that the Model Rules flatly prohibit any sort of undercover activity or misleading behavior on the part of lawyers and their agents.[130] However, such a literal reading would condemn as unethical many practices universally upheld by court decisions, such as undercover investigations by police or "discrimination testers" who apply for jobs and housing.[131] These widely accepted practices use misrepresentations solely for purposes of discovering information and gathering facts.

Several policies have been set forth justifying a prosecutor's use of undercover investigations and informants, and a lawyer or his agent's use

126. Yaroshefsky, *supra* note 121, at 278.

127. The Philadelphia Bar Ass'n Prof'l Guidance Comm., Opinion 2009-02 (2009).

128. MODEL RULES OF PROF'L CONDUCT R. 8.4(c) (2010).

129. The Philadelphia Bar Ass'n, *supra* note 127, at 3.

130. *See, e.g.*, In re Paulter, 47 P.3d 1175 (Colo. 2002) (holding that no deception whatever is allowed and recognizing that many may find their position "too rigid"); *see also* In re Conduct of Gatti, 8 P.3d 966 (Or. 2000).

131. David B. Isbell & Lucantonio N. Salvi, *Ethical Responsibility of Lawyers for Deception by Undercover Investigators and Discrimination Testers: An Analysis of the Provisions Prohibiting Misrepresentation Under the Model Rules of Professional Conduct*, 8 GEO. J. LEGAL ETHICS 791, 802 (1995). Isbell is a former chair of the American Bar Association Standing Committee on Ethics and Professional Responsibility.

of discrimination testers. First, enforcement of the law is a desirable goal, and undercover investigations may provide an effective enforcement mechanism for detecting and proving illegal activity.[132] Second, undercover investigations may provide information or prove violations that may otherwise escape discovery or proof and cannot be uncovered by other means.[133] Third, undercover investigators and discrimination testers have traditionally been widely employed by both public and private attorneys.[134] Finally, the Model Rules work in part to preserve public confidence in the legal system.[135] Under all these considerations, a result-sensitive reading of the ethical obligations against misrepresentation imposed on lawyers is appropriate, interpreted by whether the lawyer is to use a misrepresentation solely to discover information and gather facts in order to uphold the law. A defense attorney trying to uncover SNS profile information within the confines of the website ("friending" a potential witness or having a third person do so) conducts a similar misrepresentation only as to identity or purpose, and it is solely conducted for evidence-gathering purposes.

The Supreme Court of Wisconsin recently recognized that, like a prosecutor, a defense attorney may be able to use his own arsenal of deceptive investigative practices. In *Office of Lawyer Regulation v. Hurley*,[136] a private defense attorney hired an investigator to find out information on a minor who was accusing his client of sexual misconduct. Through these investigations, the defense attorney was able to obtain the minor's laptop, which contained numerous pornographic images involving adults, children, and animals.[137] The prosecutor in the case filed a grievance with the state's Office of Lawyer Regulation ("OLR"), who filed a complaint against the defense attorney.[138]

The presiding judge in the matter noted that the defense attorney's type of conduct was utilized by state district attorneys who "frequently supervise a variety of undercover activities and sting operations carried out by non-lawyers who use deception to collect evidence . . . ."[139] The prosecutor and the OLR director tried to argue that this type of conduct was not acceptable for private attorneys but were unable to point to any rule, statute, ethics opinion, or Wisconsin case that drew this distinction between prosecutors and other attorneys.[140] Indeed, the ABA Model

132. *Id.* at 801.
133. *Id.* at 802.
134. *Id.* at 803.
135. *Id.* at 804.
136. No. 07AP478-D, 2008 Wisc. LEXIS 1181, at *7 (Feb. 5, 2008).
137. *Id.* at *11.
138. *Id.* at *12.
139. *Id.* at *28 (internal quotation marks omitted).
140. *Id.* at *32-33.

Rules contain no reference to a public lawyer/private lawyer dichotomy.[141] The presiding judge held that the defense attorney's duty to "zealously defend his client[and] fulfill his constitutional obligation to provide effective assistance of counsel" was stronger than the "risk of breaking a vague ethical rule that, according to the record, had never been enforced in this way."[142] The presiding judge noted that "[t]he Sixth Amendment seems to have broken the tie for Mr. Hurley."[143] The Wisconsin Supreme Court upheld the presiding judge's conclusions.[144]

If a defense attorney feels the need to access SNS information solely for the purpose of gathering facts on a case, she should not be confined to the literal reading of the Model Rules promulgated by the Philadelphia Bar. The Sixth Amendment[145] should "break the tie" and defense attorneys should be allowed to use third parties to try to gain access to SNS information. This still does not render the SNS profile owner powerless. He can still be diligent in monitoring whose "friend requests" to accept and edit his profile, comments, and photos to remove information he would rather not have online.

C. A Proposed Framework for How a Defense Attorney Can Conduct Research on a Social Networking Site

A defense attorney looking to conduct investigations on social networking websites should be aware that in addition to the ethical rules, he must comply with the website's terms of use and applicable state and federal laws.[146] When ethical or legal restrictions are unclear, the attorney must weigh the value of the information to be obtained against the potential risks or consequences of getting it. One problem facing attorneys in this balancing act is the aforementioned wealth and scope of information that can be found on an SNS. It can be hard to determine beforehand just how relevant the information might be to a lawyer's case. A dangerous attitude is that SNSs are a "treasure trove" or "Pandora's box"[147] for the discovery process. This mindset may make an attorney think that a questionable search will later prove to be justified.

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141. Isbell & Salvi, *supra* note 131, at 807.

142. *Hurley*, 2008 Wisc. LEXIS 1181, at *37.

143. *Id.*

144. *Id.*

145. "In all criminal prosecutions, the accused shall enjoy the right . . . to have the Assistance of Counsel for his defence." U.S. CONST. amend. VI.

146. *See, e.g.*, The Stored Communications Act, 18 U.S.C. §§ 2701-2711 (2006); *MySpace Terms of Use Agreement*, MYSPACE, http://www.myspace.com/index.cfm?fuseaction=misc.terms (last visited June 25, 2009).

147. *See, e.g.*, Jaksic, *supra* note 4; Kathryn S. Vander Broek et al., *Blog Now, Pay Later – Legal Issues Concerning Social Networking Sites*, HINSHAW & CULBERTSON, LLP (Nov. 18, 2008), http://www.hinshawlaw.com/11-18-2008.

Obviously, an investigating attorney can always access publicly-available information on the Internet, viewable by anyone online without needing to join a site or log in. Many profiles on MySpace are publicly accessible and could be found through a standard search engine like Google. An attorney can also create an account on an SNS with accurate information and conduct any research with the use of that account. She can join groups, see the names of the members of those groups, and access the profiles of people that are enabled by joining the group. She may also ask individuals to be her "friend" as long as the person is not a witness disclosed by the opposing party or represented by counsel.[148] If the person is a victim or witness disclosed by the opposing party, the attorney may still ask to be a "friend" as long as she clearly identifies herself and who she represents.[149]

If the client or another third party member of an SNS provides the attorney with information obtained from an SNS, the attorney can use that information. This could disclose printouts of complete profile pages, messages, or photos. Along the same lines, an attorney may ask her client or a witness to let her observe the client/witness browsing the SNS. The attorney can direct the browsing and ask the client/witness to save or print information. If the client/witness gives explicit permission, the attorney can also use the account on her own for "passive browsing." This means the attorney can search for and look at any profiles available through the client/witness account, but cannot message, friend request, or in any way communicate with the borrowed account. This approach may be particularly useful if the client is in custody and unable to access the Internet, but this could be argued as a "gray area" since the attorney is representing herself to be someone else as far as the SNS is concerned.[150]

An attorney should avoid making any misrepresentation on her own if it could be classified as being "in the course of representing a client."[151] This language comes from Model Rule 4.1(e), but is not necessarily implicated by the mere presence of a lawyer-client relationship. To come under this rule, the lawyer must be functioning "*as a lawyer*."[152] The boundaries of this distinction are less than clear, but may allow an attorney to make minor misrepresentations if the conduct meets the dual prongs of falling out the "course of representation" and if done solely for the investigative purpose of evidence gathering. To be safe, an attorney

148. *See* MODEL R. OF PROF'L CONDUCT R. 4.3 (2010).

149. *See id.*

150. Facebook's terms of use state, "You will not provide any false information on Facebook . . . You will not share your password, let anyone else access your account." *Statement of Rights and Responsibilities*, FACEBOOK, http://www.facebook.com/terms.php?ref=pf (last visited Oct. 4, 2010).

151. MODEL R. OF PROF'L CONDUCT R. 4.1(e) (2010).

152. Isbell & Salvi, *supra* note 131, at 814.

can engage the help of a non-lawyer investigator, who would not be acting as an attorney and thus fall outside the limits of Rule 4.1(e).[153] However, if the investigator creates a fake profile to gain access to other user's information, he may violate the SNS website's terms of use, though steering clear of any legal ethics violations.[154]

CONCLUSION

SNSs have become an integral part of many of their users' lives and have proved to be an important source of information for the lawyer looking for evidence while preparing for a case. As a new generation of lawyers and police officers, comfortable with the use and role of SNSs, enters the workforce, the legal use of SNS information will become even more prevalent. Police officers and prosecutors will use the tools available under the ECPA and other statutes with more frequency, and even the best-intentioned prosecutor looking to fulfill her duty to disclose exculpatory evidence may miss or simply not recognize a highly relevant piece of information contained in the electronic records obtained. Further, the information that can be found on an SNS may provide evidence not only of a defendant's innocence, but evidence used to impeach key witnesses or even identify an alternative suspect and build an alternative theory of a case.

For these reasons, defense attorneys need to be provided with a way to gather information on SNSs that provides some balance to the inequality of access given to prosecutors through their considerable array of tools and resources. Although one solution would be to amend the SCA or the Rules of Criminal Procedure to allow defendants to compel disclosure through legal processes, a far easier solution that would require no legislative overhaul is to allow an attorney or her agents to conduct undercover investigations online.

As time goes by, the inequality of access to important online information and evidence could pose a serious threat to the pursuit of justice in our legal system. The disparate standards in criminal procedure, the use and application of the ECPA, and the disagreement between various ethics committees and scholars make the landscape a tricky one for defendants building their cases. These elements should be brought into conformance with each other, with emphasis placed on maintaining a fair balance between the information available to the prosecutor and the

153. *Id.* at 815.

154. For example, in *U.S. v. Drew*, the government unsuccessfully tried to bring criminal charges against a woman who created an entirely fictitious MySpace profile under the Computer Fraud and Abuse Act, 18 U.S.C. § 1030, for violating MySpace's terms of use. 259 F.R.D. 449 (C.D. Cal. 2009).

defendant. The right balance during the criminal discovery process will best guide the search for truth and the pursuit of justice.

HOT NEWS MISAPPROPRIATION IN THE INTERNET AGE

Eric P. Schmidt*

INTRODUCTION

The current battle over piracy of news reports did not begin on the Internet, and the newspaper industry's latest efforts to crack down on unauthorized use of its content have in many ways come full circle. In 1918 The Associated Press ("AP") sued International News Service ("INS"), alleging that the rival news wire engaged in unfair competition by copying AP news from bulletin boards and early editions of member newspapers and reselling it at a profit.[1] By affirming an injunction against this practice in *International News Service v. Associated Press* ("*INS*"), the U.S. Supreme Court established the common-law doctrine of hot news misappropriation and made several observations relevant to newsgathering in the 21st century. Although Justice Brandeis dissented

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1. Int'l News Serv. v. Associated Press, 248 U.S. 215, 231 (1918).

from the majority in *INS*, he noted that:

> The great development of agencies now furnishing country-wide distribution of news, the vastness of our territory, and improvements in the means of transmitting intelligence, have made it possible for a news agency or newspapers to obtain, without paying compensation, the fruit of another's efforts and to use news so obtained gainfully in competition with the original collector.[2]

Brandeis was referring to intelligence transmitted by telegraph and telephone, but his recognition of the role of technological change in competition among news organizations foreshadows many of today's battles about information on the Internet. As traditional newspapers struggle to compete with free alternatives, bloggers and social media users have increasingly asserted the view that the future of journalism will involve an unrestricted flow of information between numerous individuals rather than an obsolete ideal of paid, professional newsgathering. However, while the transformative power of the Internet is undisputed, it is far from clear that the demise of conventional news reporting in favor of a free online model of information sharing will be a good thing for journalism, or society.

Writing for the majority in *INS*, Justice Pitney recognized the fundamental unfairness of allowing one news outlet to profit from information gathered through the labor of an uncompensated competitor:

> In doing this defendant, by its very act, admits that it is taking material that has been acquired by complainant as the result of organization and the expenditure of labor, skill, and money, and which is salable by complainant for money, and that defendant in appropriating it and selling it as its own is endeavoring to reap where it has not sown . . . .[3]

Beyond its Lockean emphasis on the rewards of labor, the Court in *INS* advanced a utilitarian rationale for a legal system that protects the investments involved in professional newsgathering—which it recognized as a legitimate business that:

> [C]onsists in maintaining a prompt, sure, steady, and reliable service designed to place the daily events of the world at the breakfast table of the millions at a price that, while of trifling moment to each reader, is sufficient in the aggregate to afford compensation for the

2. *Id.* at 262 (Brandeis, J., dissenting).
3. *Id.* at 239.

> cost of gathering and distributing it, with the added profit so necessary as an incentive to effective action in the commercial world.[4]

As the *INS* Court understood, and as other cases have helped to illustrate, although the First Amendment guarantees a free press, the viability of the news media that the Framers sought to protect from government interference also depends on the ability of private enterprise to cover the cost of gathering news. Despite a popular backlash against mainstream media, new forms of digital communication depend on their traditional counterparts more than they are willing to admit. Developing new ways to monetize information gathered by others may reflect technological innovation, but it is no substitute for original news reporting, and recycling existing content as a business model presents the same threat to professional journalism as the low-tech piracy enjoined in *INS*. Accordingly, modern news media must recognize their continued interdependence and adapt industry norms of fair play and financial support for original reporting to new forms of communication on the Internet.

Indeed, in 2009, The Associated Press filed suit against an online competitor, alleging that All Headline News Corp. misappropriated AP content by hiring writers to find breaking news on the Internet and rewrite—or simply copy—it for sale to its own subscribers.[5] Notwithstanding the technical differences, the facts of *The Associated Press v. All Headline News Corp* ("*AHN*") parallel those in *INS*: The AP pays the substantial cost of gathering news around the world and publishing it through its members. Once that information becomes public, a competing news service resells it at a profit. The Southern District of New York's holding that the AP stated a claim against All Headline News for hot news misappropriation suggests that *INS* remains good law in the Internet age despite technological and legal complications in the interim.[6]

An apparent resurgence of the hot news doctrine continued with *Barclays Capital Inc. v. Theflyonthewall.com* ("*Theflyonthewall*"), a 2010 case involving the reproduction of stock tips from investment banking firms through a third-party website.[7] Following a bench trial, the Southern District of New York again found the doctrine applicable against an online aggregator.[8] The court issued a permanent injunction forbidding Theflyonthewall from disseminating proprietary equity

4. *Id.* at 235.

5. *See* The Associated Press v. All Headline News Corp., 608 F. Supp. 2d 454 (S.D.N.Y 2009).

6. *See id.* at 461.

7. *See* 700 F. Supp. 2d 310 (S.D.N.Y. 2010).

8. *Id.* at 336.

research until one half-hour after the opening of the New York Stock Exchange, providing an opportunity for brokerage clients most likely to trade on those tips to place orders through the firms that originated them.[9] In May 2010, however, the United States Court of Appeals for the Second Circuit cast doubt on that result by staying the injunction against Theflyonthewall and granting an expedited appeal, which was still pending as of this writing.[10]

Perhaps not coincidentally, both cases came as the AP—on behalf of a struggling newspaper business—announced "an industry initiative to protect news content from misappropriation online" by tracking the use of its stories and pursing "legal and legislative actions" against users who fail to license its content.[11] However, unanswered questions about how the law applies to bloggers, news aggregators, and other forms of digital media show that the AP's campaign will not be simple, or easy. Furthermore, today's battles over misappropriation on the Internet occur within a framework of intellectual property law that has become far more complicated than in 1918, when even the AP conceded that its content "could not, in practice, be copyrighted" in a regime requiring registration of copyrights.[12] News organizations must now consider common-law misappropriation against a range of statutory intellectual property ("IP") rights and decide which remedy best protects their content at the lowest cost—both to the industry and to society.

This note will reexamine hot news misappropriation in light of *AHN* and *Theflyonthewall* with the hope of clarifying the doctrine's role in the fight against piracy of news content online. Part I will compare the facts and law of *INS* with more recent hot news claims in the context of the news business at the time of each case. Part II will explore the advantages and disadvantages of relying on hot news misappropriation to protect news content on the Internet, particularly when measured against modern copyright law. Part III will address the argument that traditional news reporting is obsolete and examine the danger that free-riding competitors pose to the American institution of a free press. Part IV will argue that while the misappropriation doctrine could prove more valuable than statutory IP law in the newspaper industry's campaign against content piracy, a resurgence of hot news claims alone will not solve the

9. *Id.* at 347.

10. Barclays Capital, Inc. v. Theflyonthewall.com, Inc., No. 10-1372-cv (2d Cir. filed May 19, 2010).

11. Press Release, The Associated Press, AP Board Announces Initiative to Protect Industry's Content (April 6, 2009), *available at* http://www.ap.org/pages/about/pressreleases/pr_040609a.html; *see also* Richard Pérez-Peña, *A.P. Seeks to Reign in Sites Using its Content*, N.Y. TIMES, April 7, 2009, at B1.

12. Int'l News Serv. v. Associated Press, 248 U.S. 215, 233 (1918) (concluding that "news is not within the operation of the copyright act.").

problem. This note will propose that a lasting resolution will not emerge until the diverse news media of the 21st century reach a new, customs-based understanding of property rights in online news with misappropriation as an enforcement mechanism against competitors who violate industry norms. If applied wisely, the hot news doctrine could help separate innovative new models of online journalism with the potential to revitalize the industry from the free riders that risk destroying it.

I. THE CONTEXT AND LAW OF *INS*

The background of *INS* reflects both the customs of the newspaper business in the early 20th century and the unique challenges of reporting news from the European front during World War I. The AP was incorporated under New York law in 1900 and by 1918 had about 950 newspaper members and an annual expenditure of $3.5 million.[13] INS was a New Jersey corporation established in 1909 with about 400 members.[14] It was comprised mainly of newspapers controlled by William Randolph Hearst, and it had annual expenses of around $2 million.[15] The piracy of AP stories at issue in *INS* began in 1916, when British and French authorities barred INS correspondents from the front lines and prohibited their use of the European cable system because Hearst "had taken positions that were strongly sympathetic to the German cause."[16] Although the AP and INS competed for several years before the war, neither company's original business model relied on reproduction of rivals' content until the practice became necessary to continue supplying members with news from the front.[17] In fact, "there developed an industry custom (as opposed to a conscious agreement), in which all wire services joined, not to use information from rivals' bulletin boards or early editions."[18]

The *INS* case raised multiple allegations, including outright bribery of AP employees to furnish news prior to publication. The district court found this practice sufficiently inequitable to warrant a preliminary injunction. However, the claim most relevant here was that INS engaged in unfair competition by copying published news from bulletin boards

13. Richard A. Epstein, *International News Service v. Associated Press: Custom and Law as Sources of Property Rights in News*, 78 VA. L. REV. 85, 90-91 (1992).

14. *Id.* at 91.

15. *Id.*

16. *Id.* at 91-92.

17. *See id.* at 105 ("Although there may have been sporadic pirating from the time the INS was formed in 1909, the practice of lifting stories probably started in earnest, as INS policy, only after the British and French troops barred its reporters from the European theater.").

18. *Id.* at 97.

and early editions of AP member newspapers and reselling it, either verbatim or rewritten, to its own customers without attribution to the AP.[19] As the *INS* Court observed:

> [S]ince in speed the telegraph and telephone easily outstrip the rotation of the earth, it is a simple matter for defendant to take complainant's news from bulletins or early editions of complainant's members in the eastern cities and at the mere cost of telegraphic transmission cause it to be published in western papers issued at least as early as those served by complainant.[20]

The anticompetitive consequence was that INS papers in the western United States could "scoop" AP rivals with their own stories despite having played no role in gathering the news itself. The district court condemned this practice but declined to enjoin it pending INS's appeal to the Second Circuit, which remanded with directions to enjoin "any bodily taking of the words or substance of plaintiff's news, until its commercial value as news has . . . passed away."[21]

The Supreme Court in *INS* reached several fundamental conclusions about property rights in news before ultimately affirming the injunction against misappropriation of AP stories. First, the Court rejected INS's argument that any property right in news reporting is lost at the moment of publication, becoming "the common possession of all to whom it is accessible."[22] The key, the Court observed, is the "dual character" of news: a distinction between "the substance of the information and the particular form or collocation of words in which the writer has communicated it."[23] As Professor Richard Epstein has noted, "the thought that only persons who deal with the AP can speak of Pearl Harbor after it breaks the story . . . is too grotesque to admit any serious consideration."[24] However, the dual nature of news limits the overbroad claim to possession of historical facts to a narrower property right rewarding the effort required to gather and communicate news to society—but not barring others from independent investigation of the same underlying information.

For similar reasons, the *INS* Court recognized a distinction between the utilization of tips leading to independent reporting of news events and "the bodily appropriation of news matter, either in its original form or after rewriting and without independent investigation and

19. Int'l News Serv. v. Associated Press, 248 U.S. 215, 231 (1918).
20. *Id.* at 238.
21. Associated Press v. Int'l News Serv., 245 F. 244, 253 (2d Cir. 1917).
22. *INS*, 248 U.S. at 239.
23. *Id.* at 234.
24. Epstein, *supra* note 13, at 113.

verification."[25] INS had invoked the equitable doctrine of unclean hands as a bar to relief, arguing that the AP's practice of scanning rival news wires for story tips was no different than its own reproduction of AP reports from the European front.[26] The Court, however, rejected this argument on the ground that independent verification of a tip previously reported by a competitor did not reflect the same anticompetitive free-riding as simply reproducing the work of others.[27] The property interest in original news reporting requires independent effort to confirm underlying facts that remain freely accessible to everyone.

Second, the *INS* Court limited possession of news reports to a "quasi property" right enforceable against competitors but not the world at large.[28] Consequently, the misappropriation doctrine focuses on business rivals seeking to profit from the same breaking news reports, not a general right of exclusion allowing news sources to control use of their stories by the general public. While the *INS* decision forbade newspapers from pirating stories produced by uncompensated rivals, nothing about the case prevents newspaper readers from appropriating the same hot news for their own purposes, as long as that purpose does not amount to direct competition with the original source. This focus on unfair trade practices and the market value of news provides both advantages and disadvantages over statutory IP rights, as will be discussed later in this note. For now, suffice it to say that the distinction between competing news sources and the general public was clearer in 1918 before the advent of bloggers, citizen journalism, and other developments blurring the line between professional news reporting and everyday public discourse.

A. AHN *and the Declining Newspaper Industry*

While similar in principle to *INS*, the *AHN* case reflects the new reality of online competitors diverting readers away from traditional newspapers, which have lost the market dominance and profitability that they enjoyed in 1918. In 2008, the AP had 1,700 daily newspaper members and operating expenses of $725 million.[29] However, paid daily newspaper circulation in America declined from a high of more than 63

25. *INS*, 248 U.S. at 243-44.

26. *Id.* at 242.

27. *See id.* at 245.

28. *See id.* at 236 ("The question here is not so much the rights of either party as against the public but their rights as between themselves."); *see also* Michelle L. Spaulding, *The Doctrine of Misappropriation*, BERKMAN CENTER FOR INTERNET & SOC'Y, (March 21, 1998), http://cyber.law.harvard.edu/metaschool/fisher/linking/doctrine/index.html ("This right existed not against the world at large, because news is based on unprotectable facts, but against competitors.").

29. THE ASSOCIATED PRESS, CONSOLIDATED FINANCIAL STATEMENTS: YEARS ENDED DECEMBER 31, 2008 AND 2007 3, 5 (2007-2008).

million copies in 1984 to 48.6 million in 2008.[30] Similarly, expenditures on print advertising in the nation's newspapers declined from more than $47 billion in 2005 to $34.7 billion in 2008.[31] Numerous newspaper companies—including the owners of the Los Angeles Times, Chicago Tribune, Chicago Sun-Times, Minneapolis Star Tribune, Philadelphia Inquirer, New Haven Register, and Orange County Register—have filed for bankruptcy, and Denver's Rocky Mountain News published its final edition in February 2009 after 149 years in business.[32] The AP's annual report observed that "[l]ike nearly all in our industry, AP faces unprecedented economic challenges in 2009. The new member pricing program, coupled with attrition in renewals, will result in a revenue decline not seen by the company since the Great Depression."[33]

AHN also illustrates the expanded range of statutory IP remedies now available to news gatherers seeking to protect their content—if not their superiority to the misappropriation doctrine as a workable solution. The AP's complaint alleged copyright infringement under the Digital Millennium Copyright Act ("DMCA"), trademark violations under the Lanham Act, and hot news misappropriation under New York common law.[34] As described by the district court, AHN's newsgathering operation consisted of hiring "poorly paid individuals to find news stories on the Internet and prepare them for republication under the AHN banner, either by rewriting the text or copying the stories in full."[35] AHN's managers instructed writers to remove copyright notices identifying the AP as the author of articles, which the company then sold to other websites by marketing itself as a news provider.[36]

Perhaps because the conceptual foundations of *INS* remain settled law, AHN did not raise big-picture arguments about the dual nature of news and the societal benefits of free access to information. Instead, the Florida-based defendant moved to dismiss the suit on procedural grounds, arguing that the AP's misappropriation claim would not be recognized under Florida law and contending that common-law

30. *Total Paid Circulation*, NEWSPAPER ASS'N OF AM., http://www.naa.org/TrendsandNumbers/Total-Paid-Circulation.aspx (last visited Nov. 15, 2010).

31. *Advertising Expenditures*, NEWSPAPER ASS'N OF AM., http://www.naa.org/TrendsandNumbers/Advertising-Expenditures.aspx (last updated March 2010).

32. The Associated Press, *Status of Newspaper Publishers that Filed Ch. 11,* THE SEATTLE TIMES, (Sept. 14, 2009), http://seattletimes.nwsource.com/html/businesstechnology/2009864388_apusstartribuneglance.html; *see also Goodbye, Colorado*, ROCKY MOUNTAIN NEWS, Feb. 27, 2009, at A1.

33. THE ASSOCIATED PRESS, 2008 ANNUAL REPORT, 4 (2009).

34. Associated Press v. All Headline News Corp., 608 F. Supp. 2d 454, 457 (S.D.N.Y. 2009).

35. *Id.* (internal quotation marks omitted).

36. *Id.* at 458.

misappropriation had been preempted by the federal Copyright Act.[37] By holding that the AP successfully stated a misappropriation claim against AHN, the court did not directly address the merits of the case, but suggested that the hot news doctrine applies with equal force to the Internet. The *AHN* court also went beyond the scope of the *INS* decision to uphold claims that AHN had removed or altered copyright management information in violation of the DMCA.[38] The court, however, dismissed the AP's trademark infringement claims, finding AHN's use of phrases like "according to an AP report" insufficient to support a theory that potential clients had been misled into thinking that the news carried the AP's brand name.[39] The court also dismissed claims of unfair competition under the Lanham Act, which prohibits false designation of the origin of goods or services.[40] It found that the question of whether AHN could claim to be a "news service" despite its lack of original reporting was outside the scope of the Lanham Act, which focuses on commercial acts that deceive customers and impair a producer's goodwill.[41]

Following the *AHN* court's initial ruling, the parties reached a settlement whereby AHN paid the AP an undisclosed sum for unauthorized use of its content and agreed to "not make competitive use of content or expression from AP stories."[42] Consequently, the district court dismissed the case without reaching its merits or applying a full analysis to the AP's misappropriation claim. However, the AP's announcement of the settlement specifically stated that "[d]efendants further acknowledge the tort of 'hot news misappropriation' has been upheld by other courts and was ruled applicable in this case."[43] Whether this represents a shot across the bow of other online competitors is hard to say, but it does suggest that the AP considers the misappropriation doctrine a tool for deterrence and enforcement important enough to merit public mention.

B. Theflyonthewall *and New Challenges to the Hot News Doctrine*

Although not a case about journalism as such, *Theflyonthewall* may be the most thorough application by a modern court of the hot news doctrine to an online aggregator. As the district court observed,

37. *Id.*
38. *Id.* at 461.
39. *Id.* at 462.
40. *See* 15 U.S.C. §1125(a)(1)(B) (2006).
41. *AHN*, 608 F. Supp. 2d at 463.
42. Press Release, The Associated Press, AP and AHN Media Settle AP's Lawsuit Against AHN Media and Individual Defendants (July 13, 2009), *available at* http://www.ap.org/pages/about/pressreleases/pr_071309a.html.
43. *Id.*

proprietary "equity research" recommending whether to buy, sell, or hold stocks is a "foundational element" in the relationship between investment banking firms and their most significant clients.[44] Although many of these recommendations ultimately become public information through delayed release to the news media, brokerage clients derive added value from the ability to act quickly before the general public, driving commissions back to each firm.[45] Billed as the "fastest news feed on the web," Theflyonthewall provided subscribers with a continuous stream of investment recommendations leaked from brokerage houses, often before the opening of the stock market each day.[46]

The court held Theflyonthewall liable for copyright infringement and hot news misappropriation, enjoining its reproduction of proprietary equity research "until one half-hour after the opening of the New York Stock Exchange or 10:00 a.m., whichever is later."[47] In a detailed discussion of the origins and evolution of the hot news doctrine, *Theflyonthewall* court observed that the Supreme Court's decision in *INS* "was strongly influenced by several policy ideals: a 'sweat-of-the-brow' or 'labor' theory of property; norms of commercial morality and fair dealing; and a utilitarian desire to preserve incentives to produce socially useful services."[48] The court concluded that despite several periods of "flux" over the years,[49] hot news misappropriation remains a viable claim under New York law, as defined by the five-factor test articulated by the Second Circuit in *National Basketball Association v. Motorola*,[50] which will be discussed later in this note. Oral arguments before the Second Circuit in August 2010 focused on whether Theflyonthewall.com was a direct competitor in the same primary market as the investment banks, as well as the difficulty of punishing free riding without preventing news aggregation in general.[51] The court's pending response to these arguments may well chart the course of future hot news litigation.

Theflyonthewall appears to have catalyzed opposition to the hot news doctrine among critics who contend that it conflicts with modern IP law, stifles free speech, and chills innovation in an Internet economy based on an unrestricted flow of information. Google and Twitter, for

44. Barclays Capital, Inc. v. Theflyonthewall.com, 700 F. Supp. 2d 310, 315 (S.D.N.Y. 2010).

45. *See id.* at 319 ("The value of the research derives not just from its quality . . . but also from its exclusivity and timeliness.").

46. *Id.* at 322-23.

47. *Id.* at 347.

48. *Id.* at 332.

49. *Id.* at 334.

50. 105 F.3d 841, 845 (2d Cir. 1997).

51. *See* Eric P. Robinson, *Second Circuit Abuzz About FlyontheWall Case*, BLOG LAW ONLINE (Aug. 7, 2010), http://bloglawonline.blogspot.com/2010/08/second-circuit-abuzz-about-flyonthewall.html.

example, filed an amicus brief in Theflyonthewall's appeal arguing that the hot news doctrine is "obsolete" and unworkable in a world where news breaks rapidly over blogs and social networks.[52] The Electronic Frontier Foundation ("EFF") urged the court to consider the First Amendment implications of time restrictions on the communication of factual information, noting that "[s]urprisingly, no court has carefully explored the tension between the so-called 'hot news misappropriation' doctrine and freedom of speech and freedom of the press."[53] The EFF went on to argue that "[a]pplying heightened First Amendment scrutiny is especially important now, as the Internet is increasingly allowing Americans to publicly gather, share, and comment on the news of the day. Misuse of the 'hot news' doctrine could stifle this extraordinary growth of free expression."[54] From a law-and-economics perspective, Judge Richard Posner has argued that free riding on intellectual property is distinct from the theft of tangible goods and is not always a bad thing for society.[55] Posner has called for an end to the misappropriation doctrine in general, arguing that "unless misappropriation is defined narrowly with respect to particular forms of copying rather than equated to free riding, it is too sprawling a concept to serve as the organizing principle of intellectual property law."[56]

Although *AHN* and *Theflyonthewall* suggest that the hot news doctrine remains viable, neither case examined the full scope of misappropriation as a legal remedy in the modern Internet economy. For one thing, the *AHN* court addressed only one of many online practices that traditional news services now consider a threat to their profitability. As one commentator observed:

> The ruling in *The Associated Press v. All Headlines News Corp.* is certainly a big win for the AP, but it does not answer all outstanding questions concerning the use of news reports in the online arena. First, it does not address the use of headlines and lead-ins, also an open issue and the subject of dispute. Second, it is not a ruling on the merits of the AP hot news claims against AHN, although the opinion strongly favors the AP position on the merits. Third, it does not address the more difficult and complex questions concerning the use of news reports by bloggers and others who do not merely excerpt

52. *See* Jacqui Cheng, *Google and Twitter Pour Cold Water on "Hot News,"* ARS TECHNICA, http://arstechnica.com/tech-policy/news/2010/06/google-and-twitter-call-hot-news-an-obsolete-concept.ars (last visited November 29, 2010).

53. Press Release, Electronic Frontier Foundation, 'Hot News' Doctrine Could Stifle Online Commentary and Criticism (June 22, 2010) (http://www.eff.org/press/archives/2010/06/22).

54. *Id.*

55. Richard A. Posner, *Misappropriation: A Dirge*, 40 HOUS. L. REV. 621, 623 (2003).

56. *Id.* at 625.

> and link to online news reports such as those produced by the AP, but add commentary to them as well.[57]

Moreover, critics reacting to *Theflyonthewall* have begun to raise foundational objections not just to nuances of applying the hot news doctrine, but to the doctrine itself.[58] The stage may be set for the U.S. Supreme Court to ultimately reconsider the compatibility of its 1918 decision in *INS* with Internet communication, content aggregation, and changing conceptions of free speech and freedom of the press. Accordingly, this note now turns to these and other unanswered questions about the doctrine's applicability—and desirability—in the context of protecting original news reporting online.

II. MISAPPROPRIATION AS AN ALTERNATIVE TO STATUTORY IP LAW

Perhaps the greatest advantage of the hot news doctrine over statutory IP remedies, such as copyright infringement, is its focus on anticompetitive conduct rather than the technicalities of what constitutes fair use, idea versus expression, and other legal terms of art. With origins in equity instead of the minutia of the United States Code, misappropriation is both a broader remedy than copyright, and one difficult to define outside the facts of individual cases. Most importantly for news gatherers, misappropriation protects content whether or not it is reproduced verbatim.[59] Re-wording a competitor's news report might avoid a copyright claim, but it will not escape misappropriation liability if the substance of the report is taken from an uncompensated rival in an attempt to exploit its value. In other words, the inquiry is whether the market value of news—not the language used to communicate it—has been pirated by a competitor without the effort of gathering it independently. This difference provides obvious benefits in an industry where the market value of news is in its freshness more than its literary merit. As technology writer Julian Sanchez has observed:

> The [Recording Industry Association of America] and [Motion Picture Association of America] can at least try—however ineffectively—to use copyright law to stanch unauthorized copying of

57. Jeff Neuburger, *Want Some Hot News? AP Hot News Case Against Online News Aggregator Survives Motion to Dismiss*, NEW MEDIA & TECH. LAW BLOG (Feb. 26, 2009), http://newmedialaw.proskauer.com/2009/02/articles/online-content/want-some-hot-news-ap-hot-news-case-against-online-news-aggregator-survives-motion-to-dismiss.

58. *See supra* notes 52-54 (suggesting the hot news doctrine is "obsolete" and could violate the First Amendment).

59. *See* Int'l News Serv. v. Associated Press, 248 U.S. 215, 231 (1918) (finding misappropriation in news copied "either bodily or after rewriting it").

> their works. But what AP is selling isn't really the scintillating prose of its writers: its fast access to the facts of breaking news. Now, though, a writer for any one of a million websites can read an AP story on the site of a subscribing news organization, write up their own paraphrase of the story, and have it posted—and drawing eyeballs from AP subscribers—within an hour of the original's going live.[60]

Thus, an emphasis on misappropriation rather than copyright infringement addresses the real issue affecting the profitability of newsgathering: free-riding off of original reporting, regardless of the literal similarity.

In many ways, the foundations of copyright law are incompatible with the desire of news organizations to monopolize news until they can recoup their investments in gathering it. The Copyright Act expressly provides that ideas and discoveries of natural occurrences are not eligible for protection.[61] Moreover, U.S. copyright law has long recognized an "idea-expression dichotomy" distinguishing original expressions of an idea from the idea itself, which is either a matter for patent law or not protectable at all. In the 1879 case of *Baker v. Selden*, the Supreme Court held that the copyright for a book describing an improved method of bookkeeping protected the prose of that book but did not prevent others from using the same method on their own accounting forms.[62] In *Feist Publications, Inc. v. Rural Telephone Service Co.* the Supreme Court reiterated that facts themselves are not copyrightable and emphatically rejected a "sweat of the brow" justification for copyright law.[63] The *Feist* Court held that an alphabetical list of names, towns, and telephone numbers in a phone directory was factual information not arranged with sufficiently originality to merit copyright protection, regardless of the effort and expense of compiling the directory.[64] The Court further remarked that "[t]he most fundamental axiom of copyright law is that no author may copyright his ideas or the facts he narrates."[65] Thus, copyright law is hostile to the notion that the first person to publish an account of an event has any right to exclude others from using the same

60. Julian Sanchez, *AP Launches Campaign Against Internet 'Misappropriation,'* ARS TECHNICA (Apr. 6, 2009, 8:40 PM) http://arstechnica.com/tech-policy/news/2009/04/ap-launches-campaign-against-internet-misappropriation.ars.

61. 17 U.S.C. §102 (2006) ("In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.").

62. 101 U.S. 99, 107 (1879).

63. 499 U.S. 340, 354 (1991).

64. *Id.* at 363-64.

65. *Id.* at 344-45 (internal quotation marks omitted).

information, regardless of the cost of gathering it.

Furthermore, the 1976 Copyright Act expressly includes news reporting within its definition of fair use,[66] raising questions about whether copyright law provides any recourse to news organizations seeking to protect their content from others claiming to gather news themselves. Consequently, "even if a court was to hold and find that the facts of a news story are copyrightable, if a subsequent news writer used them[,] it would most likely be considered a 'fair use.'"[67] Moreover, as Epstein has observed, the extended duration of copyright protection is better suited to literary works that retain their value over time than news reports whose relevance is often measured in days or hours.

> At one level, ordinary copyright protection is insufficient in the short run because a rewrite of the news story does not offend copyright, although it results in the misappropriation of the AP's effort to collect the information for the story. Yet, in another sense, copyright protection is overbroad, for the optimal length of copyright protection, always measured in years, is wildly excessive for news.[68]

Thus, the fact that news reports are now subject to copyright protection has not proven a solution to anticompetitive misappropriation, in part because of irreconcilable philosophical differences between the two doctrines.

Furthermore, other developments in IP law since the *INS* decision have not yielded remedies that are obviously superior to misappropriation in the context of the news business. The DMCA provides new tools for online news operations by prohibiting circumvention of encryption technologies and removal or alteration of copyright management information ("CMI").[69] The *AHN* court found that the AP stated a claim that AHN writers violated §1202(b) of the DMCA by intentionally removing copyright notices from AP stories.[70] The court rejected AHN's argument that the DMCA applies only to circumvention of automated copyright management systems, citing with approval another federal case holding that the language of the Act does not limit the statute's application merely to digital encryption or automated copyright protection.[71] However, other courts have reached the opposite

66. *See* 17 U.S.C. §107 (2006).

67. Ryan T. Holte, *Restricting Fair Use to Save the News: A Proposed Change in Copyright Law to Bring More Profit to News Reporting*, 13 J. TECH. L. & POL'Y 1, 21 (2008).

68. Epstein, *supra* note 13, at 116.

69. 17 U.S.C. §§1201-02 (2009).

70. The Associated Press v. All Headline News Corp., 608 F. Supp. 2d 454, 461 (S.D.N.Y 2009).

71. *Id.* at 462 (citing McClatchey v. The Associated Press, 2007 WL 776103 (W.D. Pa. 2007)).

conclusion, holding that CMI, within the meaning of the DMCA, is limited to technological measures or processes controlling access to the protected work.[72] Either way, the DMCA could provide an enforcement mechanism for news organizations employing technological measures to prevent their copyrighted content from being "hacked" by competitors. News Corporation chairman Rupert Murdoch, for example, has announced his intention to transition his news websites to pay models and then block them from being indexed on Google.[73] The real question, however, is whether the potential benefits are worth the loss in traffic brought in by the same search engines supposedly stealing copyrighted content. Commentators have differed on whether Murdoch's announcement reflects shrewd business sense or a high-stakes bluff designed to extract licensing revenue from Google's competitors.[74] In any case, although the DMCA creates new remedies applicable to online piracy, it is not clear that it reaches the kind of conduct at issue in *INS*.

Despite its focus on protecting brand identity, trademark law also has proven inadequate to prevent free-riders from "passing off" original news reporting as their own. The AP's trademark claim in *AHN* asserted that use of phrases such as "according to an AP report" caused consumer confusion as to the origin of the stories by misleading readers into believing they carried the AP's brand name.[75] The district court dismissed this argument for lack of factual support, finding that conclusory allegations of consumer confusion were insufficient to support the AP's claim. The *AHN* court also dismissed a separate trademark claim alleging that AHN misrepresented the source of its product by marketing itself as a "newsgathering organization"—a matter of semantics that the court found to be outside the scope of the Lanham Act.[76] It is unclear whether dismissal of these claims reflects an inherent weakness in trademark law or merely deficiencies in the AP's pleadings. However, the outcome is consistent with the Supreme Court's holding in *Dastar Corp. v. Twentieth Century Fox Film Corp.* that the Lanham Act does not prevent unattributed copying of works in the public domain.[77] Thus, it is safe to conclude that piracy of news content involves more

72. *See, e.g.*, Textile Secrets Int'l, Inc. v. Ya-Ya Brand, Inc., 524 F. Supp. 2d 1184, 1201-1202 (C.D. Cal. 2007) (holding that the CMI provision of the DMCA did not extend to a copyright notice printed on the border of a fabric design); IQ Group, Ltd. v. Wiesner Publ'g, LLC, 409 F. Supp. 2d 587, 598 (D.N.J. 2006) (finding that removal of an e-mail advertiser's logo and hyperlink to its website did not violate the DMCA).

73. Eric Etheridge, *Murdoch's Google Gambit*, N.Y. TIMES (Nov. 10, 2009, 5:31 PM), http://opinionator.blogs.nytimes.com/2009/11/10/murdochs-google-gambit.

74. *See id.* (comparing bloggers' reactions to Murdoch's plan).

75. *All Headline News Corp.*, 608 F. Supp. 2d at 462-63.

76. *Id.* at 463.

77. *See* 539 U.S. 23, 35 (2003) ("Reading 'origin' in § 43(a) [of the Lanham Act] to require attribution of uncopyrighted materials would pose serious practical problems.").

than confusion over brand names. Free riders such as AHN exploit the value of information itself, apart from the value they derive from obscuring the true origin or the details of their business model.

Misappropriation could prove a simpler and more effective solution to piracy of online news than statutory IP regimes such as copyright and trademark. For better or worse, courts applying the misappropriation doctrine rely on an intuitive sense of fair play more than black-letter law enacted by Congress under pressure from powerful constituents. The misappropriation doctrine provides an equitable alternative to IP law that is more flexible, but also leaves more power in the hands of the courts. That troubles commentators such as Posner, who has criticized the misappropriation doctrine as "alarmingly fuzzy" due to its "lack of clear boundaries."[78] Still, as Professor Henry Smith has observed, misappropriation may be a useful alternative to the equally problematic expansion of statutory IP rights:

> In IP there has been, in reaction to *International News Service*, a tendency to use formal IP law where once misappropriation might have served. Might some of the impetus for business method patents and expansive uses of copyright have been somewhat dulled if the most egregious problems of freeriding in violation of existing industry custom could have been addressed through suits for misappropriation and unjust enrichment? Again, it is hard to say because it has hardly been tried.[79]

In many ways, hot news misappropriation gets to the heart of the matter by focusing on the fundamental unfairness of profiting from the work of others rather than splitting hairs over statutory interpretation and the difficulties of applying existing IP rights to evolving industries. The reasoning of *INS* applies now to news transmitted over the Internet as it did in 1918 to the telephone and telegraph because misappropriation focuses on anticompetitive conduct and its effect on market value, not regulation of any particular technology. Measured against the ever-increasing complexity of statutory IP—a body of law filled with legislative compromises, assumptions based on obsolete technologies, and loopholes for special interests—the misappropriation doctrine offers a relatively straightforward alternative that is well suited to the realities of the news business.

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78. Posner, *supra* note 55, at 638.

79. Henry E. Smith, *Does Equity Pass the Laugh Test?: A Response to Oliar and Sprigman*, 95 VA. L. REV. IN BRIEF 9, 16 (2009); *but see* Posner, *supra* note 55, at 638 ("Society has dealt with this problem primarily though not exclusively by specifying intellectual property rights statutorily rather than by leaving it to the courts to decide on a case-by-case basis whether the incentive-access trade-off favors protection or nonprotection.").

A. Disadvantages of the Misappropriation Doctrine

Beyond the risk of judicial activism inherent in equitable remedies, there are practical concerns that call into question the viability of misappropriation as a solution to piracy of news content. For one, the Supreme Court's landmark decision in *Erie Railroad Co. v. Tompkins* weakened the precedential force of *INS* by declaring that "[t]here is no federal general common law" and requiring federal courts to apply the law of the forum state unless deciding a question of constitutional or federal law.[80] In contrast to the exclusively federal jurisdiction over patents and copyrights, there is no federal misappropriation statute.[81] As the *AHN* court observed, "[a]lthough *Erie* would render the federal common law origins of *International News Service* non-binding in the federal courts, the cause of action is still recognized under the laws of various states . . . ."[82] However, a misappropriation claim might come out differently in each of the 50 states, presenting a serious problem when news on the Internet is often national or international in scope. AHN sought to exploit this difficulty by arguing that even if New York recognized the tort of hot news misappropriation, its home state of Florida would not.[83] The district court rejected this argument through a choice-of-law analysis, concluding that the alleged harm to the AP occurred in New York, so New York law should apply.[84] However, its discussion of the Florida cases cited by both parties illustrates the difficulty of misappropriation claims turning on the varied laws of each state. With no case directly on point, the AP argued that Florida "would" recognize a hot news misappropriation claim based on an antitrust opinion citing a Second Circuit misappropriation case as part of its application of the Sherman Act.[85] AHN, on the other hand, argued that a 1943 case declining to extend the reasoning of *INS* to a magic act involving the production of beverages from seemingly empty beakers had established that Florida would never recognize hot news misappropriation in any context.[86] Although the AP prevailed in that argument, it is clear that the misappropriation doctrine as a matter of state law is less binding and less predictable than in the days of *INS*. This uncertainty adds to the cost and risk of misappropriation litigation, and may weigh in favor of other remedies codified at the federal level and

80. 304 U.S. 64, 78 (1938).

81. Spaulding, *supra* note 28.

82. Associated Press v. All Headline News Corp., 608 F. Supp. 2d 454, 459 (S.D.N.Y 2009).

83. *Id.* at 458-59.

84. *Id.* at 460.

85. *Id.* at 459 (citing Morris Commc'ns Corp. v. PGA Tour, Inc., 117 F. Supp. 2d 1322, 1328-29 (M.D. Fla. 2000)).

86. *Id.* at 460 (citing Glazer v. Hoffman, 16 So. 2d 53, 55-56 (Fla. 1943)).

enforced uniformly across the county.

Because of the varied application of hot news misappropriation in different states, it remains unclear to what extent the doctrine has been preempted by federal law. As the Supreme Court remarked in *Kewanee Oil Co. v. Bicron Corporation*:

> States may hold diverse viewpoints in protecting intellectual property to invention as they do in protecting the intellectual property relating to the subject matter of copyright. The only limitation on the States is that in regulating the area of patents and copyrights they do not conflict with the operation of the laws in this area passed by Congress . . . .[87]

In *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, the Supreme Court reaffirmed the doctrine that "state regulation of intellectual property must yield to the extent that it clashes with the balance struck by Congress."[88] The *Bonito* Court held that a state law protecting the design of unpatented boat hulls was preempted by the federal patent system, remarking that "the States may not offer patent-like protection to intellectual creations which would otherwise remain unprotected as a matter of federal law."[89]

Similarly, the 1976 Copyright Act expressly preempts recognition under state law of rights "equivalent to any of the exclusive rights of copyright in works that are within the subject matter" of copyright law.[90] However, the Act exempts from federal preemption "activities violating legal or equitable rights that are not equivalent to any of the exclusive rights within the general scope of copyright . . . ."[91] As discussed previously, it remains unclear whether misappropriation is an alternative approach to subject matter eligible for copyright or a backup plan when the limited scope of copyright fails to protect the investments required to gather news. Accordingly, "[s]ome courts and commentators have argued that the exclusion of ideas and facts from copyright protection in § 102(b) of the Copyright Act demonstrates that such material is not 'within the subject matter of copyright,' thus permitting protection under state law."[92]

> State restrictions on appropriating the copyrightable aspects of works

87. 416 U.S. 470, 479 (1974).

88. 489 U.S. 141, 152 (1989) (reaffirming Sears, Roebuck & Co. v. Stiffel Co., 376 U.S. 225 (1964)).

89. *Id.* at 156.

90. RESTATEMENT (THIRD) OF UNFAIR COMPETITION §38 cmt. e (1995) (citing 17 U.S.C. § 301(2009)).

91. 17 U.S.C. § 301(b)(3) (2009).

92. RESTATEMENT, *supra* note 90.

> fixed in a tangible medium of expression, however, are clearly preempted. A more difficult issue arises in connection with the application of the misappropriation doctrine to protect the non-copyrightable aspects or elements of such works, including ideas or facts taken apart from the form in which they are expressed.[93]

This unsettled area of misappropriation law continues to challenge courts applying the common law of various states.

In the leading case of *National Basketball Association v. Motorola*, the Second Circuit held that under New York law, "only a narrow 'hot-news' misappropriation claim survives preemption for actions concerning material within the realm of copyright[,]" rejecting the view of earlier cases that misappropriation applied broadly to "'any form of commercial immorality'" including copying from competitors.[94] In *Motorola*, the NBA alleged hot news misappropriation, false advertising, copyright infringement, and other claims against a pager service broadcasting information about basketball games in progress.[95] The district court found Motorola liable for misappropriation, but dismissed the other claims.[96] The Second Circuit held that while the underlying facts of basketball games were not copyrightable subject matter, the 1976 Copyright Act specifically extended protection to simultaneously recorded transmissions of live sporting events, satisfying the subject matter requirement of a preemption analysis.[97] The *Motorola* court rejected a "partial preemption" standard that would have made it "possible for a plaintiff to assert claims both for infringement of its copyright in a broadcast and misappropriation of its rights in the underlying event[,]"[98] effectively circumventing preemption by the Copyright Act. Instead, the court adopted a five-element test to determine when a state-law misappropriation claim is sufficiently distinct from copyright infringement to survive federal preemption:

> (i) a plaintiff generates or gathers information at a cost; (ii) the information is time-sensitive; (iii) a defendant's use of the information constitutes free riding on the plaintiff's efforts; (iv) the defendant is in direct competition with a product or service offered by the plaintiffs; and (v) the ability of other parties to free-ride on the efforts of the plaintiff or others would so reduce the incentive to

93. *Id.*

94. 105 F.3d 841, 851-52 (2d Cir. 1997) (disapproving of Metro. Opera Ass'n v. Wagner-Nichols Recorder Corp., 101 N.Y.S.2d 483 (N.Y. Sup. Ct. 1950)).

95. *Id.* at 844.

96. *Id.*

97. *Id.* at 848.

98. *Id.* (quoting Nat'l Basketball Ass'n v. Sports Team Analysis & Tracking Sys., Inc., 939 F.Supp. 1071, 1098 n.24 (S.D.N.Y. 1996)).

> produce the product or service that its existence or quality would be substantially threatened.[99]

The *Motorola* court concluded that although the pager service transmitted time-sensitive information and competed directly with a similar service being developed by the NBA, it did not free-ride on the plaintiff's efforts because it bore its own costs of collecting and transmitting factual information from each game.[100] Thus, while *Motorola* affirmed the theoretical possibility of state-law misappropriation surviving federal preemption, it simultaneously narrowed the scope of *INS* by preempting a misappropriation claim based on underlying facts subject to copyright when recorded for broadcast.

In light of the complex legal analysis required to determine whether a state misappropriation claim is preempted by copyright law, uncertainty over federal preemption is another practical challenge to the viability of hot news misappropriation. The *Motorola* court's rejection of "partial preemption" suggests that plaintiffs cannot have it both ways by claiming copyright infringement as to written news reports and misappropriation as to the underlying facts, even if the facts themselves fall outside the scope of copyright. Consequently:

> [I]t seems clear that there is no standardized national policy of whether state laws concerning the misappropriation of facts are preempted by federal copyright laws. Additionally, with respect to national news specifically being misappropriated on the Internet, it is obvious that individual state misappropriation laws will not provide clear messages to large media corporations.[101]

It is possible that free-riding competitors pirating time-sensitive information from news organizations struggling to finance their own operations could consistently satisfy the *Motorola* court's "extra elements" test.[102] However, when the *Scranton Times* sued a rival newspaper in 2009 for republishing obituary information, a federal court denied its misappropriation claim on preemption grounds.[103] The court held that the *Times* failed to satisfy the final prong of the *Motorola* test by alleging

99. *Id.* at 845.

100. *Id.* at 853-54.

101. Holte, *supra* note 67, at 31.

102. *But see* Posner, *supra* note 55, at 638 ("The apparent precision of [the *Motorola* court's] five-factor test may be illusory. The precision is purely verbal, and cannot tell a would-be 'misappropriator' whether his conduct is likely to cross the legal line.").

103. Scranton Times, L.P. v. Wilkes-Barre Publ'g Co., No. 3:08-cv-2135, *available at* 2009 WL 585502, at *4 (M.D. Pa. Mar. 6, 2009).

a threat to its very existence from the reproduction of its obituaries.[104] Thus, the mere threat of federal preemption and the extra steps of litigation required to avoid it are likely to give pause to any news organization considering a state-law misappropriation action.

Another difficulty is that *INS* recognized hot news misappropriation by competitors but not by the public at large.[105] Subsequent cases have made clear that direct competition in business is a virtual prerequisite for the anticompetitive free-riding required to sustain a misappropriation claim.

> In most of the small number of cases in which the misappropriation doctrine has been determinative, the defendant's appropriation, like that in INS, resulted in direct competition in the plaintiff's primary market. . . . Appeals to the misappropriation doctrine are almost always rejected when the appropriation does not intrude upon the plaintiff's primary market. Only rarely have courts applied the doctrine to appropriations of intangible trade values for use in secondary or derivative markets.[106]

In *National Football League v. Governor of State of Delaware*, a federal court rejected a misappropriation claim against a state lottery game based on the scores of NFL games, finding that while the lottery sought to profit from the popularity of professional football, it was a "collateral service" not in direct competition with the NFL.[107] The court remarked that:

> It is true that Delaware is thus making profits it would not make but for the existence of the NFL, but I find this difficult to distinguish from the multitude of charter bus companies who generate profit from servicing those of plaintiffs' fans who want to go to the stadium or, indeed, the sidewalk popcorn salesman who services the crowd as it surges towards the gate.[108]

In a rare case finding misappropriation between non-competitors, the Illinois Supreme Court in *Board of Trade of the City of Chicago v. Dow Jones & Co.* held that the Board of Trade could not use the Dow Jones

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104. *Id. But see* David Johnson, *Digital Media Lawyer Beware: Court's Rejection of "Hot News" Cause of Action Appears to Be Based on Misunderstanding of Pleading Standards For Hot News Claim*, DAVID JOHNSON'S DIGITAL MEDIA LAWYER BLOG, Mar. 23, 2009, http://www.digitalmedialawyerblog.com/copyright/hot_news_misappropriation_1.

105. *See* Int'l News Serv. v. Associated Press, 248 U.S. 215, 236 (1918) ("The question here is not so much the rights of either party as against the public but their rights as between themselves.").

106. RESTATEMENT, *supra* note 90, § 38 cmt. c.

107. 435 F. Supp. 1372, 1378 (D. Del. 1977).

108. *Id.*

stock market index as the basis for its stock index futures contracts without permission.[109] The Board of Trade disclaimed any association with Dow Jones and argued that it had not caused competitive injury, but "merely created a new product which is outside the primary market which the producer of the original product originally set out to satisfy."[110] While acknowledging that the parties were not in direct competition, the court applied a balancing test to conclude that any harm resulting from the Board of Trade's inability to tie its futures contracts to the Dow Jones index would be outweighed by the benefits of encouraging the development of new indexes specifically designed for the futures market.[111] Three dissenting justices, however, rejected this approach, arguing that "[t]he common law tort of misappropriation has been limited to cases where intellectual property, lawfully obtained, is used in direct competition with the person who created it."[112] Thus, the potential for misappropriation between non-competing parties is another unsettled area of law that may discourage use of the doctrine in borderline cases.

The difficulty of defining direct competition is especially troublesome in the context of modern news distribution, which is no longer dominated by print newspapers with circulation limited by geography. Bloggers and citizen journalists now copy or link to news reports and then add their own commentary, blurring the line between the business of newsgathering and non-commercial political speech. Although the *AHN* court found misappropriation applicable to an online AP competitor, the defendant's role as a self-described "news service" distributing stories to other websites was so similar to the AP's business model that it was difficult to deny direct competition. While bloggers and news aggregators do not compete directly with the AP as a wire service, their distribution of the same content for free could inevitably affect the AP's ability to retain paying customers. To date, the AP's legal battles against bloggers have focused on fair use under the DMCA—and provoked a backlash among bloggers who accuse the wire service of chilling free speech by threatening litigation over quotes as short as 40 words.[113] Given the AP's difficulties with these copyright claims, it makes sense that its initial foray into misappropriation on the Internet

109. Spaulding, *supra* note 28 (citing Bd. of Trade of Chi. v. Dow Jones & Co., 456 N.E.2d 84, 90 (Ill. 1983)).

110. *Bd. of Trade*, 456 N.E.2d at 87 (internal quotation marks omitted).

111. *Id.* at 90.

112. *Id.* at 91 (Simon, J., dissenting).

113. Saul Hansell, *The A.P. Asserts Tough (and Still Secret) View of Copyright on Blogs*, N.Y TIMES (June 20, 2008, 4:29 PM), http://bits.blogs.nytimes.com/2008/06/20/the-ap-asserts-tough-and-still-secret-view-of-copyright-on-blogs; *see also* Blogger Boycott of AP, UNASSOCIATED PRESS, http://unassociatedpress.net/index.php?option=com_beamospetition&Itemid=27&func=sign&pet=1 (last visited Nov. 28, 2010).

targeted a business that was unquestionably a competitor. However, if the misappropriation doctrine is to provide a broader remedy against free-riding by other Internet news sources, courts will face difficult questions concerning what counts as a competitor and how to balance that definition with the free-speech rights of bloggers and social media users.

III. WHAT IS AT STAKE

The *INS* Court recognized that the case involved more than the AP losing profits to an unscrupulous business rival. Instead, the broader issue was the long-term viability of a free press, an American institution protected by the Constitution and historically defended by the courts. Perhaps one reason that the "sweat of the brow" justification for hot news misappropriation has endured, despite being rejected in copyright law, is that courts have long recognized the unique importance of professional journalism in a democratic society. While the First Amendment protects journalists from government interference, survival of the press as a viable business depends on the continued investment of time and money required to gather breaking news. The *INS* Court expressed concern that without legal protection for the market value of news, businesses like the AP would ultimately cease to provide information to the public:

> Indeed, it is one of the most obvious results of defendant's theory that, by permitting indiscriminate publication by anybody and everybody for purposes of profit in competition with the news-gatherer, it would render publication profitless, or so little profitable as in effect to cut off the service by rendering the cost prohibitive in comparison with the return.[114]

Justice Pitney's reasoning in *INS* relied on *National Telegraph News Co. v. Western Union Telegraph Co.*, a 1902 case cited with approval in *INS*.[115] In that case, the Seventh Circuit held that while news reports on Western Union "tickers" were not copyrightable, they were a commercial product entitled to equitable protection from a competing telegraph service that obtained ticker tapes from Western Union offices and quickly retransmitted the information over its own network.[116] The key point of the *Western Union* opinion is that not only would it harm the plaintiff to allow a competitor to free-ride off of its efforts to gather

114. Int'l News Serv. v. Associated Press, 248 U.S. 215, 241 (1918).

115. *See* Epstein, *supra* note 13, at 95-96 (discussing Nat'l Tel. News Co. v. W. Union Tel. Co., 119 F. 294 (7th Cir. 1902)).

116. *Nat'l Tel. News Co.*, 119 F. at 295-96.

news—it would ultimately harm the public by causing the distribution of news as a business enterprise to "cease altogether."[117]

> And in the withdrawal of appellee from this business, there would come death to the business of appellants as well; for without the use of appellee's tape, appellants would have nothing to distribute. The parasite that killed, would itself be killed, and the public would be left without any service at any price.[118]

The parasite analogy is a strong but apt way of describing free riders that divert revenue away from the same entities they depend upon for their own existence. In the short term, misappropriation produces a windfall for competitors recouping the investments of others. But over time, free riders run the risk that their impact on the market will be so great that there will no longer be any profits to share. To borrow another analogy, "the eventual effect would be to kill the goose that laid the golden eggs."[119]

Justice Brandeis's dissent in *INS* provides a strong counterpoint about the societal importance of unfettered communication and foreshadows today's debate about freedom of information on the Internet. Brandeis was skeptical of property rights in news of interest to the general public, noting that "[a]n essential element of individual property is the legal right to exclude others from enjoying it."[120] In Brandeis's view, if the purpose of a free press is to promote democracy by keeping society informed, the law should not frustrate that goal by allowing news sources to restrict access to vital information to ensure their own profit. Thus, he observed:

> The general rule of law is, that the noblest of human productions—knowledge, truths ascertained, conceptions, and ideas—become, after voluntary communication to others, free as the air to common use. Upon these incorporeal productions the attribute of property is continued after such communication only in certain classes of cases where public policy has seemed to demand it. These exceptions are confined to productions which, in some degree, involve creation, invention, or discovery. But by no means all such are endowed with this attribute of property.[121]

Brandeis's view of free access to ideas and information anticipates the

117. *Id.* at 296.

118. *Id.*

119. Posner, *supra* note 55, at 628.

120. Int'l News Serv. v. Associated Press, 248 U.S. 215, 250 (1918) (Brandeis, J., dissenting).

121. *Id.*

modern argument that unrestricted communication is a basic human right, especially in light of the Internet's potential to inform underserved populations and allow them to express their own opinions without fear of censorship.[122] Still, if all published information is "free as the air to common use," the question becomes who pays for that information to be published in the first place—and how long they will continue absent some assurance of return on their investment. Despite the appeal of a world where all information is exchanged freely, the mere absence of government censorship does not guarantee widespread access to information unless the business of gathering it remains worthwhile.

In 21st century America, it is not easy to elicit sympathy for traditional media, which are either too liberal, too corporate, too lazy, or too intrusive for the tastes of many news consumers. Consequently, some observers scoff at the notion of preserving journalism as a profession, asking instead why the greedy, biased, anachronistic remnants of the Fourth Estate deserve to be saved from their own incompetence. Public hostility toward mainstream media and the persistent belief that information on the Internet is inherently free have made it tempting for bloggers and online aggregators to dismiss newspapers as obsolete relics being replaced by modern equivalents that perform the same function at no cost. The claim is that it is survival of the fittest, and dinosaurs deserve extinction; cheaper, smarter, and more transparent forms of news distribution will evolve to take their place. Even if the final result is not perfect, it could not possibly be worse than the media we already have.

This view, however, ignores that while the Internet facilitates the broad distribution of news content, news does not originate *from* the Internet and never will. As former Los Angeles Times editor John Carroll said in a 2006 interview:

> I estimate that roughly 85 percent of the original reporting that gets done in America gets done by newspapers . . . . They're the people who are going out and knocking on doors and rummaging through records and covering events and so on. And most of the other media that provide news to people are really recycling news that's gathered by newspapers.[123]

122. *See, e.g.*, DECLARATION OF PRINCIPLES, WORLD SUMMIT ON THE INFO. SOC'Y, (2003), *available at* http://www.itu.int/wsis/docs/geneva/official/dop.html ("[E]veryone has the right to freedom of opinion and expression; that . . . right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.").

123. Interview by PBS Frontline with John Carroll, Fellow at Harvard's John F. Kennedy School of Gov't's Shorenstein Ctr. for Press, Politics and Pub. Policy, former editor of the Los Angeles Times (July 8, 2006), *available at* http://www.pbs.org/wgbh/pages/frontline/newswar/interviews/carroll.html (quoted and

By contrast, a survey of seven leading blogs by the Project for Excellence in Journalism found that only five percent of postings included original research, and one percent involved original interviews.[124] The highest level of original reporting in 79 percent of postings was commentary by the blogger.[125] The authors concluded that "[w]e found little of what would be considered journalistic reporting done by these bloggers, as in examining public documents, conducting interviews, or acting as a direct witness to events."[126] True, bloggers occasionally break news based on their own tips and research or provoke traditional media to cover previously underreported issues.[127] However, blogs that report their own stories have nothing to fear from newspapers invoking the hot news doctrine, which since *INS* has explicitly allowed the independent pursuit of news tips.[128] If anything, hot news protection might encourage more bloggers to do their own reporting by rewarding added value beyond the personal commentary that presently dominates blog postings.

As the *INS* Court recognized, original news reporting is time-consuming and expensive, while reproduction is easy and cheap thanks to evolving technology. The dramatic rise of Web 2.0 applications allowing users to share their own content has led some commentators to predict that the death of the newspaper industry will lead to the rebirth of a new—and better—model of journalism.[129] Social media strategist Paul Gillin, for example, argues that the inevitable demise of traditional newspapers will lead to a new market for online news in which "[e]ditorial content is outsourced to an army of individual enthusiasts and bloggers who find interesting information on the Web and feed it to the site operators," thereby reducing editorial expenses to practically nothing.[130]

However, each blog comment and search engine link still depends

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discussed in Holte, *supra* note 67, at 4).

124. PROJECT FOR EXCELLENCE IN JOURNALISM, THE STATE OF THE NEWS MEDIA 2006: AN ANNUAL REPORT ON AMERICAN JOURNALISM (2006), http://www.stateofthemedia.org/2006/narrative_daymedia_blogs.asp.

125. *Id.*

126. *Id.*

127. *See, e.g.*, Paul Kedrosky, *Do Bloggers Break News?* INFECTIOUS GREED, (March 14, 2006) http://paul.kedrosky.com/archives/2006/03/14/do_bloggers_bre.html (criticizing methodology of Project for Excellence in Journalism survey and citing several blogs that break original news).

128. *See* Int'l News Serv. v. Associated Press, 248 U.S. 215, 245 (1918).

129. *See, e.g.*, Paul Gillin, *About the Blogger*, NEWSPAPER DEATH WATCH, http://www.newspaperdeathwatch.com/about (last visited Dec. 21, 2010) ("Ultimately, this painful decline will give birth to a new model of journalism built upon aggregation and reader-generated content. I'm an optimist, and I think the new journalism will be better in many ways than what preceded it.").

130. PAUL GILLIN, HOW THE COMING NEWSPAPER INDUSTRY COLLAPSE WILL REINVENT JOURNALISM 3 (2006).

on an original source of information. The danger is that without newspapers and wire services reporting news in the first place, bloggers and aggregators will have nothing to opine about and nothing to feed to other websites. Declining profits, layoffs, and bankruptcies at newspapers across the country show that there is a real danger of the industry's collapse under the weight of free-riding competitors. As the court predicted in *Western Union*, "[t]he parasite that killed, would itself be killed, and the public would be left without any service at any price."[131]

IV. TOWARD A NEW UNDERSTANDING OF INDUSTRY NORMS

The hot news doctrine could play a valuable role in the newspaper industry's survival, but it must be part of a broader realignment of norms in the news business in order to balance the Internet's potential for free access to information with the realization that free-riding as a business model is ultimately bad for everyone. In contrast to statutory IP rights, "customs that reflect commercial morality mainly have entered the law (or equity) through doctrines of misappropriation and unjust enrichment."[132] Consequently, the power of misappropriation as a legal remedy depends on the existence of industry norms to guide its application. The hot news doctrine originated as an equitable enforcement of the customs of the news business in the early 1900s. The doctrine could serve as an equally powerful tool in the 21st century, but only when the divergent interests that now comprise the news media reach a rough consensus of what is fair competition—and what is not—in light of the technological and social changes that have disrupted the industry. This means that wire services, newspapers, broadcasters, and bloggers must agree—not on everything, but on a basic set of norms outlining a new sense of fair play between news gatherers, distributors, and consumers. Given the backlash against copyright enforcement and fundamental differences over intellectual property on the Internet, this agreement will not come easily. However, the stakes are high for everyone involved.

Epstein argues that the competitive understanding that developed among wire services before World War I was not just polite, but rational, because newspapers depended on the wires for content and appreciated the risk of not paying their share of the cost.[133] Such a "self-enforcing contract" arises when actors involved in repeat transactions recognize that the long-term value of their relationship is greater than the potential gain from a single breach.[134]

131. Nat'l Tel. News Co. v. W. Union Tel. Co., 119 F. 294, 295-96 (7th Cir. 1902).
132. Smith, *supra* note 79, at 13.
133. Epstein, *supra* note 13, at 101-02.
134. *Id.* at 102-04.

> Each party knows that the danger of retaliation is so great that once it decides to adopt a free-rider position, it will, over time, lose its own investment in the news-gathering business. As repeat players, the newspapers that rely upon these agencies or constitute their membership or clients also must fear the destruction of their sources of information, which constitutes a powerful incentive to respect the customary rules in their ordinary business.[135]

However, self-enforcing contracts are vulnerable to disruptions—such as the outbreak of war or the development of new technologies—that alter the value of maintaining the status quo.[136]

> The secret of the self-enforcing contract, then, is to ensure that the short-term gains from defection never exceed the long-term benefits from preserving general stability. But these short-term gains from defection may be increased dramatically by events beyond the control of the parties, which would undermine the apparent permanence of the overall relationship.[137]

Epstein observes that INS broke the industry custom against pirating stories from competitors only when it became necessary to salvage its business after being barred from the front in World War I.[138] The immediate need to continue supplying its papers with news from Europe outweighed the value of maintaining stability in the industry, so INS sought to redefine the accepted understanding of property rights in news. Epstein's analysis shows how changing circumstances can lead to disequilibrium in industries that previously policed themselves through mutual understandings, and it also underscores the value of the misappropriation doctrine as a legal backup when self-enforcing contracts break down.

The Internet has had the effect of a world war on the global distribution of information, and the news business remains in a state of disequilibrium struggling to adapt. The norms that governed newsgathering while the industry was still dominated by print publications are now challenged by Internet business models that find more value in destroying the status quo than maintaining it. In the short term, it is understandable that newcomers see opportunity in an unrestricted flow of information because even modest revenues are pure profit when content can be recycled at no cost. Part of the current turmoil involves testing the legal boundaries of new technologies and

135. *Id.* at 101.
136. *Id.* at 104.
137. *Id.* at 105.
138. *Id.*

business models, and enforcement through traditional IP law has had mixed results. Considering the legal uncertainty and the profit motive for reproducing existing content rather than gathering it independently, it is not surprising that many businesses have calculated that the immediate gains of piracy outweigh the long-term risk of cannibalizing the news business itself. This, however, is a serious gamble, and one that free-riding news sources take at their own peril. If the industry determines that all information is free for the taking only to realize there is no longer a steady stream of news to reproduce, nobody will emerge the winner. It is not that there will be *nothing* on the Internet—a point proven every day by blogs and websites that value quantity over quality. The question is whether what remains of journalism will continue to supply readers with new information, or merely provide a forum to recirculate what they already know. The ultimate danger is that if originators of news can no longer finance their own reporting, free-riding news sources will become just as obsolete as the traditional media they sought to replace.

Clearly, the solution to disequilibrium in the news business goes deeper than a volley of DMCA takedown notices or letters to Congress seeking regulation of emerging technologies; it calls for a fundamental reexamination of customs and norms in an industry where market power has shifted significantly in recent years. The values embodied in the hot news misappropriation doctrine provide a workable starting point for this process by focusing on fair competition irrespective of technology or medium. The legal system has been understandably reluctant to grant property rights in historical facts, and no news report should result in a permanent monopoly over the event itself. However, the misappropriation doctrine's concern with the market value of news correctly shifts the focus from fair use that may not harm anyone to anticompetitive conduct that poses a serious threat to professional journalism. Furthermore, the *Motorola* court's "extra elements" test helps narrow the scope of what could otherwise be an overbroad remedy, targeting free-riding on time-sensitive information that directly affects the viability of newsgathering as a profession.[139] The appellate court's injunction in *INS* against "any bodily taking of the words or substance of plaintiff's news, until its commercial value as news has . . . passed away"[140] raises the still-unanswered question of how long is long enough for a news organization to adequately recoup its investment in original reporting. It also is worth considering that news may have remained "hot" longer in 1918, before the current shift from a 24-hour news cycle to virtually continuous publication. However, these questions are ones of degree and not of the basic soundness of the premise that the law should

139. *See* Nat'l Basketball Ass'n v. Motorola, Inc., 105 F.3d 841, 853 (2d Cir. 1997).

140. Associated Press v. Int'l News Serv., 245 F. 244, 253 (2d Cir. 1917).

enforce industry norms of fair competition, thereby providing an economic incentive to continue producing original news reports. The *INS* opinion is not the end of this conversation, but it is a good start.

The development of a new self-enforcing contract for fair play in newsgathering is surely in the public interest, but it is also in the interest of industry players who depend on each other's work to coexist. The value of hot news misappropriation as a tool in this process is that it provides legal teeth to industry norms and protects those who play by the rules against defectors who value short-term gains over symbiotic relationships. The answer is not to add more complexity to a convoluted intellectual property regime that is poorly suited to protecting the time value of news. Despite its procedural challenges, the misappropriation doctrine provides an alternative that is simpler, more flexible, and more likely to foster fair competition in the news business, instead of creating new statutory loopholes for free-riders to exploit. The point is not to stifle innovation by forcing the news sources of the future to conform to the outdated customs of a dying newspaper industry. The goal, rather, should be for the legal system to protect the viability of professional newsgathering in the 21st century by enforcing a new set of norms that ultimately benefit everyone.

CONCLUSION

The hot news misappropriation doctrine announced in *INS* remains relevant nearly a century later thanks to its flexibility to adapt to new technologies and its focus on the market value of news rather than the language or medium used to report it. However, both the newsgathering business and the statutory scheme of intellectual property law have become far more complex than in the days of World War I. The *AHN* and *Theflyonthewall* decisions show that common-law misappropriation may be at least as effective as copyright or trademark law for modern newsgathering organizations seeking to protect the fruits of their labor against free-riding competitors. However, the uncertainty of an equitable remedy applied differently in each state and possibly preempted by federal law may discourage news organizations from relying on the doctrine in their fight against online piracy.

While the challenges of applying misappropriation to the Internet are real, the broad range of interests that now comprise the news media must remember that they depend on each other for their long-term survival and share an interest in preventing conduct that ultimately harms everyone. The assumption that newspapers and news wires are obsolete relics of the 20th century that will soon be replaced by bloggers and news aggregators rests on the false premise that reproduction of existing information is the same as original reporting. Free-riders currently

exploiting a declining newspaper industry risk creating a future where there are no professional news reports to recycle at a profit, undermining their own business models and jeopardizing the American tradition of a free press. Accordingly, news media in the 21st century must develop new norms of fair competition, balancing the openness of the Internet with the realization that nothing is ever "free" in the long run. The flexibility of the misappropriation doctrine provides a workable foundation for this process, as well as a powerful tool for enforcing the result.