JTHTL

JOURNAL ON TELECOMMUNICATIONS AND HIGH TECHNOLOGY LAW

VOLUME 8, ISSUE 2

THE DYNAMISM OF TECHNOLOGY AND LAW

UNIVERSITY OF COLORADO · 1876 ·
LET YOUR LIGHT SHINE

COLORADO LAW
UNIVERSITY OF COLORADO LAW SCHOOL

Silicon Flatirons

□

.

■■

University of Colorado Law School
2009-2010 Faculty

Deans

David H. Getches, *Dean and Raphael J. Moses Professor of Natural Resources Law.* A.B., Occidental College; J.D., University of Southern California.

Dayna Bowen Matthew, *Associate Dean for Academic Affairs and Professor of Law.* A.B., Harvard-Radcliffe College; J.D., University of Virginia.

Sarah A. Krakoff, *Associate Dean for Research and Professor of Law.* B.A., Yale University; LL.B, University of California, Berkeley.

Lorenzo A. Trujillo, *Assistant Dean for Students and Professional Programs and Professor Attendant Rank.* B.A., University of Colorado; M.A., University of Colorado; Ed.D., University of San Francisco; J.D., University of Colorado.

Susani Harris, *Assistant Dean for Career Development.* B.A., University of Colorado; M.A., University of Arizona; J.D., University of Denver College of Law.

Kristine H. Jackson, *Assistant Dean for Admissions and Financial Aid.* B.S., University of North Carolina; J.D., George Mason University.

Emeritus Faculty

Norman F. Aaronson, *Clinical Professor Emeritus, Legal Aid and Defender Program.* A.B., Brandeis University; J.D., Boston University.

Clifford J. Calhoun, *Professor Emeritus.* A.B., LL.B., Harvard University.

Homer H. Clark, Jr., *Professor Emeritus.* A.B., LL.D., Amherst College; LL.B., LL.M., Harvard University.

James N. Corbridge, Jr., *Professor Emeritus.* A.B., Brown University; LL.B., Yale University.

Ted J. Fiflis, *Professor Emeritus.* B.S., Northwestern University; LL.B., Yale University.

H. Patrick Furman, *Clinical Professor Emeritus, Legal Aid and Defender Program, and Director of Clinical Programs.* B.A., J.D., University of Colorado.

David S. Hill, *Professor Emeritus.* B.S., J.D., University of Nebraska.

J. Dennis Hynes, *Professor Emeritus.* B.A., LL.B., University of Colorado.

Howard C. Klemme, *Professor Emeritus.* B.A., LL.B., University of Colorado; LL.M., Yale University.

Courtland H. Peterson, *Nicholas Doman Professor of International Law Emeritus.* B.A., LL.B., University of Colorado; M. Comp. L., University of Chicago; Dr. Jur., University of Freiburg (Germany).

■□□

WILLIAM E. RENTFRO, *Professor Emeritus*. B.A., University of Colorado; Th.M., LL.B., University of Denver.

PETER N. SIMON, *Professor Emeritus*. B.S., M.D., University of Wisconsin; J.D., University of California, Berkeley.

NORTON L. STEUBEN, *Professor Emeritus*. A.B., J.D., University of Michigan.

ARTHUR H. TRAVERS, JR., *Professor Emeritus*. B.A., Grinnell College; LL.B., Harvard University.

TENURED AND TENURE-TRACK FACULTY

BARBARA A. BINTLIFF, *Nicholas Rosenbaum Professor of Law and Law Library Director*. B.A., Central Washington State College; J.D., M.L.L., University of Washington.

WILLIAM BOYD, *Associate Professor of Law*. Ph.D., University of California, Berkeley; J.D., Stanford University.

HAROLD H. BRUFF, *Charles Inglis Thomson Professor of Law*. B.A., Williams College; J.D., Harvard University.

ALEXIA BRUNET MARKS, *Associate Professor of Law*. B.A., Colgate University; M.S., Purdue University; Ph.D., Purdue University; J.D., Northwestern University.

EMILY M. CALHOUN, *Professor of Law*. B.A., M.A., Texas Tech University; J.D., University of Texas.

PAUL F. CAMPOS, *Professor of Law*. A.B., M.A., J.D., University of Michigan.

DEBORAH J. CANTRELL, *Director of Clinical Programs and Associate Professor of Law*. B.A., Smith College; M.A., University of California, Los Angeles; J.D., University of Southern California.

KRISTEN CARPENTER, *Associate Professor of Law*. B.A., Dartmouth College; J.D., Harvard University.

RICHARD B. COLLINS, *Professor of Law and Director of the Byron R. White Center for the Study of American Constitutional Law*. B.A., Yale College; LL.B., Harvard University.

NESTOR DAVIDSON, *Associate Professor of Law*. A.B., Harvard University; J.D., Columbia University.

JUSTIN DESAUTELS-STEIN, *Associate Professor of Law*. B.A., University of North Carolina, Ashville; J.D., University of North Carolina, Chapel Hill; LL.M., Harvard University.

MIRANDA P. FLEISCHER, *Associate Professor of Law*. B.A., Duke University; J.D., University of Chicago; LL.M., New York University.

VICTOR FLEISCHER, *Associate Professor of Law*. B.A., J.D., University of Chicago.

WAYNE M. GAZUR, *Professor of Law*. B.S., University of Wyoming; J.D., University of Colorado; LL.M., University of Denver.

■□■

PHILIP J. WEISER, *Professor of Law*. B.A., Swarthmore College; J.D., New York University.

MARIANNE WESSON, *Professor of Law and Wolf-Nichol Fellow*. A.B., Vassar College; J.D., University of Texas.

AHMED A. WHITE, *Associate Professor of Law*. B.A., Southern University and A & M College; J.D., Yale University.

CHARLES F. WILKINSON, *University's Distinguished Professor and Moses Lasky Professor of Law*. B.A., Denison University; LL.B., Stanford University.

RESEARCH AND CLINICAL FACULTY

NORMAN F. AARONSON, *Clinical Professor Emeritus, Legal Aid and Defender Program*. A.B., Brandeis University; J.D., Boston University.

J. BRAD BERNTHAL, *Associate Clinical Professor of Law*. B.A., University of Kansas; J.D., University of Colorado.

DEBORAH J. CANTRELL, *Director of Clinical Programs & Associate Professor of Law*. B.A., Smith College; M.A., University of California, Los Angeles; J.D., University of Southern California.

VIOLETA CHAPIN, *Associate Clinical Professor of Law*. B.A., Columbia College; J.D., New York University.

MARGARET ANN ENGLAND, *Associate Clinical Professor*, *Legal Aid and Defender Program*. B.A., University of Michigan; J.D., University of Denver.

COLENE ROBINSON, *Associate Clinical Professor, Juvenile and Family Law*. B.A., Valparaiso University; J.D., Loyola University School of Law, Chicago.

JILL E. TOMPKINS, *Clinical Professor of Law and Director of American Indian Law Clinic*. B.A., The King's College; J.D., University of Maine.

LEGAL WRITING AND APPELLATE ADVOCACY FACULTY

AL CANNER, *Legal Writing Professor*. B.A., Brandeis University; J.D., University of Colorado.

CATHARINE DU BOIS, *Legal Writing Professor*. B.A. Indiana University; J.D. Georgetown University Law Center.

DEREK H. KIERNAN-JOHNSON, *Legal Writing Professor*. A.B. Princeton University; J.D., University of Michigan.

NATALIE MACK, *Legal Writing Professor*. B.S., University of South Carolina; J.D., University of Colorado.

GABRIELLE M. STAFFORD, *Legal Writing Professor*. B.A., University of Pennsylvania; J.D., Boston University.

■■■

TODD M. STAFFORD, *Legal Writing Professor*. B.A., Southern Methodist University; J.D., Duke University.

LAW LIBRARY FACULTY

BARBARA A. BINTLIFF, *Nicholas Rosenbaum Professor of Law and Law Library Director*. B.A., Central Washington State College; J.D., M.L.L., University of Washington.

ALICIA BRILLON, *Reference Librarian*. B.A., M.L.I.S., University of Washington; J.D., Seattle University.

GEORGIA K. BRISCOE, *Associate Director and Head of Technical Services*. B.S., Washington State University; M.A., University of San Diego; M.L.S., University of Michigan.

YUMIN JIANG, *Technical Services Librarian*. M.S., University of Illinois, Urbana-Champaign; M.A., University of Wisconsin.

ROBERT LINZ, *Head of Public Services and Associate Director of Law Library*. B.A., Wake Forest University; J.D., University of Florida; M.L.I.S., Florida State University.

ALAN PANNELL, *Reference Librarian*. B.A. University of Oklahoma; J.D. Western New England College; M.A. University of Arizona.

KAREN SELDEN, *Catalog Librarian*. B.S., Pennsylvania State University; M.L.S., Simmons College.

JANE E. THOMPSON, *Head of Faculty Services*. B.A., University of Missouri; M.A., J.D., University of Denver.

ADJUNCT, ADJOINT, AND VISITING FACULTY

GARRY R. APPEL, *Attorney at Law, Appel & Lucas, P.C., Denver, Colorado*. B.A., J.D., University of Colorado.

GEOFFREY BARRY, *Of Counsel, Holland & Hart, Boulder, Colorado*. A.B., Princeton University; J.D., University of Colorado.

JOHN BOYD, *Management/Strategy Consultant*. B.A., University of Iowa; J.D., University of Michigan.

STEVEN CLYMER, *Attorney at Law, ACCORD Dispute Resolution Services, Boulder, Colorado*. A.B., St. Louis University; J.D., Case Western Reserve University.

CHRISTINE A. COATES, *Attorney at Law, Boulder, Colorado*. B.A., Houston Baptist University; M.Ed., University of Houston; J.D., University of Colorado.

DARLA DANIEL, *Attorney, Zisman Ingraham & Daniel, Denver, Colorado*. B.A., Trinity University; J.D., University of Colorado.

■□□□

THE HONORABLE WILEY Y. DANIEL, *Judge, United States District Court for the District of Colorado*. B.A., J.D., Howard University.

DANIEL N. DEASY, *Attorney at Law, George Browning & Associates, Westminster, Colorado*. B.A., J.D., University of Colorado.

BRUCE DIERKING, *Attorney at Law, Boulder, Colorado*. B.A., University of Northern Colorado; J.D., University of Colorado.

THE HONORABLE ALLISON HARTWELL EID, *Justice, Colorado Supreme Court, Denver, Colorado*. A.B., Stanford University; J.D., University of Chicago.

TROY EID, *Shareholder, Greenberg Traurig, LLP, Denver, Colorado*. A.B., Stanford University; J.D., University of Chicago.

ERIC ELIFF, *Partner, Morrison Foerster, Denver, Colorado*. B.S., Washington University; J.D., University of Colorado.

JOSEPH FELLER, *Professor of Law, Arizona State University and Senior Counsel for National Wildlife Federation, Boulder, Colorado*. B.A., Harvard University; Ph.D., University of California, Berkeley; J.D., Harvard University.

ROGER FLYNN, *Executive Director, Western Mining Action Project, Boulder, Colorado*. B.S., Lehigh University; J.D., University of Colorado.

NAOMI GALE, *Schusterman Visiting Professor*. B.A., University of Tel Aviv; Ph.D., University of Sydney; LL.B., Herzliya Interdisciplinary College of Law (Israel).

HANNAH R. GARRY, *Former Deputy Chief of Cabinet and Legal Officer at the International Criminal Tribunal for the Former Yugoslavia, The Hague, Netherlands*. B.A., Wheaton College; M.I.A., Columbia University; J.D., University of California, Berkeley.

THE HONORABLE NEIL M. GORSUCH, *Judge, United States Court of Appeals for the Tenth Circuit, Denver, Colorado*. B.A, Columbia University; J.D., Harvard University; Ph.D., Oxford University.

ANDREW HARTMAN, *Partner, Cooley Godward LLP, Broomfield, Colorado*. A.B., University of Michigan; J.D., Georgetown University.

BRUCE KRAMER, *Of Counsel, McGinnis, Lochridge, & Kilgore LLP, Houston, Texas*. B.A., J.D., University of California, Los Angeles; LL.M., University of Illinois.

DAVID KREUTZER, *First Assistant Attorney General, Colorado Attorney General's Office*. B.A., University of Colorado; J.D., University of Denver College of Law.

VICTORIA MARSCHNER, *Adjunct Professor*. J.D., University of Denver College of Law.

CHRISTOPHER MCKEE, *Adjunct Professor*. B.A., University of North Carolina, Greensboro; J.D., M.T.S., Emory University.

JACK MILLS, *Attorney at Law, A.J. Mills, P.C., Boulder, Colorado*. B.B.A., LL.B., University of Oklahoma.

ROBERT NICHOLS, *Adjunct Professor*. B.A., Baylor University; J.D., University of Oklahoma.

■□□■

PAUL SHONING, *Research Fellow, Silicon Flatirons Center for Law, Technology, and Entrepreneurship*. United States Naval Academy; M.S., Stanford University; J.D., University of Colorado.

JULIE TEEL, *Senior Research Associate, Center for Energy & Environmental Security*. B.S., University of California, Berkeley; J.D., New York University.

■□■■

FROM THE EDITOR

Larry Lessig argued in 1999 that "[w]e see something when we think about the regulation of cyberspace that other areas would not show us."[1] The last decade has provided seemingly endless support for this proposition in the form of the constantly changing, organically evolving interaction between technology and law. I am pleased to present several articles exploring this dynamic in this second and final issue of the eighth volume of the *Journal on Telecommunications and High Technology Law*.

The issue begins with telecommunications policy, including Professor Rob Frieden's detailed examination of recent failings at the Federal Communication Commission and an argument by Professors Robert Hahn and Hal Singer against government intervention in exclusive arrangements between mobile device firms and wireless providers. It then turns to privacy and law enforcement issues, with Electronic Frontier Foundation Legal Director Cindy Cohn criticizing the warrantless wiretapping regimes of the current and previous administrations and Chris Soghoian discussing the privacy implications of cloud computing. Finally, the issue concludes with explorations of copyright, including Blake Fry's definitive piece on protection of typefaces and Professor Pam Samuelson's consideration of the looming consequences of the Google Book Settlement for academic authors.

I am also pleased to present several notes from our editors that explore the dynamism of technology and law. Kelli Brensdal discusses the state of the patent safe harbor regime in light of the *Proveris* decision, Devin Looijen argues for a new paradigm for digital contracts, and Jeff O'Holleran tracks historical and ongoing attempts to legislate video game censorship. Finally, I am honored to have the opportunity to present my critique of Professor Orin Kerr's controversial "substitution effects" justification for the Fourth Amendment's third-party doctrine.

I offer my heartfelt thanks to all of our authors for their outstanding contributions to the *Journal*. In addition, I must credit much of our success over the past year to our outstanding faculty advisors, including Professors Paul Ohm, Harry Surden, Brad Bernthal, Andrew Schwartz,

---

1. Lawrence Lessig, *The Law of the Horse: What Cyberspace Might Teach*, 113 HARV. L. REV. 501, 502 (1999).

■■□□

and Dale Hatfield, and thank them for their boundless investments of time and intellectual capital in the *Journal*. I also want to acknowledge Anna Noschese, Wendy Seltzer, Zach Mountin, Doug Edwards, Natalie Pusey, Cindy Gibbons, Martha Utchenik, and the rest of our colleagues at the Silicon Flatirons Center, the Colorado Law Review, and the Colorado Journal of International Environmental Law and Policy for all of their support.

The production of the *Journal* is a team effort that would not have been possible without the hard work of all our members and editors. In particular, special thanks are due to our Lead Production Editor Per Larsen for going above and beyond the call of duty in helping to prepare both our print and digital editions for publication.

I am pleased to be handing over the reins for the ninth volume of the *Journal* to an incredibly talented group of editors who will be led by Editor-in-Chief Eric Schmidt, Managing Editor Alison Baker, Executive Editor Catherine Holtgrewe, and Production Editors Therese Kerfoot and Jake Adkins. The outstanding dedication and skill they have demonstrated over the past year leaves me with tremendous confidence that the *Journal* will be in good hands, and I wish them luck for a successful year.

Finally, I owe a debt of gratitude to my wife and best friend Sara Reid, my mom Kathleen Ellis, and the rest of my family and friends for their infinite patience and support over the past year and throughout my law school career. I dedicate this issue to them.

Blake Ellis Reid
Editor–in–Chief

■■□■

CONTENTS

■■■□

▪▪▪▪

CASE STUDIES IN ABANDONED EMPIRICISM AND THE LACK OF PEER REVIEW AT THE FEDERAL COMMUNICATIONS COMMISSION

ROB FRIEDEN[*]

INTRODUCTION

Despite its legal obligation to serve the public interest[1] by using its expertise and data collection to make rational decisions,[2] the Federal

---

     * Pioneers Chair and Professor, Pennsylvania State University. Contact information: 102 Carnegie Building, University Park, Pennsylvania 16802; (814) 863-7996; rmf5@psu.edu; http://www.personal.psu.edu/faculty/r/m/rmf5/.

     1. For example, the Communications Act requires the FCC to reduce market entry barriers for entrepreneurs and other small businesses in the provision and ownership of telecommunications services and information services that serve "the public interest, convenience, and necessity." 47 U.S.C. § 257(c)(1) (2008).

     2. "[A regulatory] agency must examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made." Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983). Qwest Corp. v. FCC, 258 F.3d 1191, 1198-99 (10th Cir. 2001) (citing Olenhouse v. Commodity Credit Corp., 42 F.3d 1560, 1575 (10th Cir. 1994) (determining that the FCC failed to provide adequate justifications to prove rational decision making in calculating subsidy mechanism for promoting universal service in high cost areas) ("If the agency has failed to provide a reasoned

Communications Commission (FCC) frequently engages in results-driven decision making.[3] Rather than collect a complete evidentiary record, including empirical evidence to support its policy prescriptions, Commission managers seemingly determine the answers to some questions before the agency solicits and analyzes filings of interested parties and stakeholders.[4] Fealty to political and economic doctrine[5] appears to drive such actions leading the FCC to reach conclusions

---

explanation for its action, or if limitations in the administrative record make it impossible to conclude the action was the product of reasoned decision-making, the reviewing court may supplement the record or remand the case to the agency for further proceedings. It may not simply affirm.")).

3. *See, e.g.*, Am. Radio League, Inc. v. FCC, 524 F.3d 227 (D.C. Cir. 2008) (reversing the FCC based on the Commission's dismissal of empirical data submitted at its invitation without reason or analysis).

4. Increasingly the FCC Commissioners vote along party lines rather than reach a nonpartisan consensus. The following Joint Statement by the two Democratic Commissioners, strongly opposing media cross-ownership deregulation, expresses strong displeasure with the substance and approach of a deregulatory initiative championed by Republican Chairman Kevin Martin:

> There is still time to do this the right way. Congress and the thousands of American citizens we have talked to want a thoughtful and deliberate rulemaking, not an alarming rush to judgment characterized by insultingly short notices for public hearings, inadequate time for public comment, flawed studies and a tainted peer review process - all designed to make sure that the Chairman can deliver a generous gift to Big Media before the holidays. For the rest of us: a lump of coal.

Joint Statement by Commissioners Copps and Adelstein on Chairman Martin's Cross-Ownership Proposal, 2007 WL 3376805 (Nov. 13, 2007).

5. FCC decisions regularly recite economic doctrine:

> In economic theory generally and in its application to regulation, the relationship of price and marginal cost is of fundamental importance. Marginal cost can be simply defined as the rate of change in total cost when output changes by an infinitesimal unit. In economics, the term incremental cost refers to a discrete change in total cost when output changes by any non-infinitesimal amount, which might range from a single unit to a large increment representing a firm's entire output. The terms additional costs and avoidable costs are commonly used to refer to incremental costs resulting from an increase or a decrease in output respectively.

High-Cost Universal Service Support, *Order on Remand & Report & Order & Further Notice of Proposed Rulemaking*, 24 FCC Rcd. 6475, 6605 (2008). By assuming that a market operates competitively, the FCC can recite economic doctrine to support conclusions that consumers benefit from the Commission's regulatory or deregulatory decisions. *Id*. at 6605-06 ("In a competitive market, it is assumed that both consumers and producers independently will choose outputs to purchase or to supply on the basis of a market price. In standard economic analysis, this price is determined by the intersection of a downward sloping demand function, which represents consumer valuations for additional units of consumption, and an upward sloping supply function, which represents the marginal cost of supplying an additional unit. The competitive price is efficient in the following sense. At any other price, consumer demands would no longer be equal to producer supply, and market transactions would be limited to the smaller of the two terms. At this level of output, consumers would value an additional unit of output more than the cost of producing it as determined by the marginal cost function. Hence both consumers and producers could be made better off by increasing output by a small amount. When price is equal to the competitive price, no alternative price can be found such that both consumer and producers are better off.") (citations omitted).

without having engaged in rational decision making.[6] Additionally, the FCC often receives broadly conferred legislative authority and ambiguous mandates from Congress. When a statute makes a specific directive without factual support, the FCC similarly can pursue such a mandate without any factual corroboration and judicial second-guessing.[7] When a statute suffers from ambiguity, courts typically accord the FCC ample discretion to flesh out the meaning of the statute and establish policies and rules provided the interpretation satisfies a reasonableness standard.[8]

Remarkably, the FCC has relied upon questionable and unverifiable statistics to justify not only the wisdom in abandoning regulations, but also the need for more regulatory oversight despite its disposition toward deregulation. For example, the FCC has used statistics to support the conclusion that such ample facilities-based competition exists in broadcast,[9] broadband,[10] and wireless markets[11] that the Commission can further reduce ownership caps,[12] approve multi-billion dollar, market

---

6. Courts will set aside agency decisions found to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

7. "[A] legislative choice is not subject to courtroom fact-finding and may be based on rational speculation unsupported by evidence or empirical data." FCC v. Beach Commc'ns, Inc., 508 U.S. 307, 315 (1993) (holding statutory requirement that satellite master antenna television system operators secure a franchise if they link separately owned buildings or use public rights of way constitutional even though single building service had no such franchising requirement).

8. *See* Chevron U.S.A. Inc. v. Natural Res. Def. Council, Inc., 467 U.S. 837 (1984). "If a statute is ambiguous, and if the implementing agency's construction is reasonable, *Chevron* requires a federal court to accept the agency's construction of the statute, even if the agency's reading differs from what the court believes is the best statutory interpretation." Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs., 545 U.S. 967, 980 (2005) (citing *Chevron*, 467 U.S. at 843–44, n.11) (upholding the FCC's determination that cable modem-provided Internet access constitutes an information service).

9. *See, e.g.*, Existing Shareholders of Citadel Broadcasting Corp. & of The Walt Disney Co., etc. for Consent to Transfers of Control, *Memorandum Opinion & Order & Notice of Apparent Liability*, 22 FCC Rcd. 7083 (2007).

10. *See* Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, *Report & Order & Notice of Proposed Rulemaking*, 20 FCC Rcd. 14,853, 14,901, ¶ 90 (2005), *petition for review denied by* Time Warner Telecom, Inc. v. FCC, 507 F.3d 205 (3d Cir. 2007) (forbearing, on the Commission's own motion, from applying tariffing requirements to providers of wireline broadband Internet access service that offer the underlying transmission component of broadband Internet access service as a telecommunications service); *see also*, Rob Frieden, *Lies, Damn Lies and Statistics: Developing a Clearer Assessment of Market Penetration and Broadband Competition in the United States*, 14 VA. J.L. & TECH. (Summer 2009), *available at* http://www.vjolt.net/vol14/issue2/v14i2_100%20-%20Frieden.pdf.

11. *See* Applications of Cellco Partnership D/B/A Verizon Wireless & Atlantis Holdings LLC, for Consent to Transfer Control of Licenses, Authorizations, & Spectrum Manager & De Facto Transfer Leasing Arrangements, *Memorandum Opinion & Order & Declaratory Ruling*, 23 FCC Rcd. 17,444 (2008) (conditionally approving Verizon Wireless acquisition of Alltel wireless assets resulting in a 90 percent market share held by four firms).

12. *See, e.g.*, 2006 Quadrennial Regulatory Review—Review of the Commission's Broadcast Ownership Rules & other Rules Adopted Pursuant to Section 202 of the Telecommunications Act of 1996, *Report & Order & Order on Reconsideration*, 23 FCC Rcd. 2010, 2018–19 (2007). "For the

concentrating mergers,[13] and claim that the United States continues to benefit from best-in-class access to telecommunications services.[14] The FCC regularly overstates the scope and reach of competition to justify actions that will ultimately concentrate ownership and control in the telecommunications industry.[15]

But in other rare instances, the FCC uses a worst-case scenario to justify expansion of its regulatory reach. A former Chairman of the FCC, with an eye toward broadening regulatory scrutiny of the cable television industry, insisted that data not even compiled by Commission staff proved that the market had become so concentrated as to meet a congressionally legislated trigger[16] for more regulation.[17] The FCC

---

better half of the existence of federal ownership regulations, which date back to the 1940s, the Commission offered and the courts required little evidence of the connection between ownership and viewpoint diversity." Daniel E. Ho & Kevin M. Quinn, *Viewpoint Diversity and Media Consolidation: An Empirical Study*, 61 STAN. L. REV. 781, 789 (Feb. 2009).

13. *See, e.g.*, Applications Filed for the Transfer of Control of Embarq Corporation to Centurytel, Inc., *Memorandum Opinion & Order*, 48 Commc'ns Reg. (P&F) 24, 2009 WL 1811057 (June 25, 2009); AT&T Inc. and BellSouth Corp. Application for Transfer of Control, *Memorandum Opinion & Order*, 22 FCC Rcd. 5662 (2007); SBC Commc'ns, Inc. & AT&T Corp. Applications for Approval of Transfer of Control, *Memorandum Opinion & Order*, 20 FCC Rcd. 18,290 (2005); Verizon Commc'ns, Inc. & MCI, Inc. Applications for Approval of Transfer of Control, *Memorandum Opinion & Order*, 20 FCC Rcd. 18,433 (2005); Applications of AT&T Wireless Services, Inc. & Cingular Wireless Corp., *Memorandum Opinion & Order*, 19 FCC Rcd. 21,522 (2004); General Motors Corp. & Hughes Electronics Corp., Transferors, & The News Corporation Limited, Transferee, *Memorandum Opinion & Order*, 19 FCC Rcd. 473 (2004).

14. John Kneuer, Former Assistant Secretary for Communications and Information and Administrator at the Commerce Department's National Telecommunications and Information Administration claimed in 2008 that the United States "has the most effective multiplatform broadband in the world." *True or False: U.S.'s Broadband Penetration Is Lower Than Even Estonia's; Answer: True*, NEWSWEEK, July 9, 2007, at 58, *available at* http://www.newsweek.com/id/33456/page/2.

15. AT&T Inc. & BellSouth Corp., Application for Transfer of Control, *Memorandum Opinion & Order*, 22 FCC Rcd. 5662, 5724-25 (2007) ("[T]here is substantial competition in the provision of Internet access services. Broadband penetration has increased rapidly over the last year with more Americans relying on high-speed connections to the Internet for access to news, entertainment, and communication. Increased penetration has been accompanied by more vigorous competition. Greater competition limits the ability of providers to engage in anticompetitive conduct since subscribers would have the option of switching to alternative providers if their access to content were blocked or degraded. In particular, cable providers collectively continue to retain the largest share of the mass market high speed, Internet access market. Additionally, consumers have gained access to more choice in broadband providers.").

16. Section 612(g) of the Cable Communications Policy Act of 1984, Pub. L. No. 98-549, 98 Stat. 2779, codified at 47 U.S.C. § 532(g), states that: (1) "at such time as cable systems with 36 or more activated channels are available to 70 percent of households within the United States" and (2) "are subscribed to by 70 percent of the households to which such systems are available, the Commission may promulgate any additional rules necessary to provide diversity of information sources."

17. Annual Assessment of the Status of Competition in the Market for Delivery of Video Programming, Statement of Chairman Kevin J. Martin, *Thirteenth Annual Report*, 24 FCC Rcd. 542, 739 (2009) [hereinafter *Thirteenth Annual Video Programming Report*] ("For the first time this year, however, the Commission received data from one of the sources the industry itself relies on, Warren Communications News, that results in finding that the test has been met. Specifically, its

persists in extensively regulating cable television, based on the perception that this industry does not support robust competition that the Commission considers widespread elsewhere in the telecommunications marketplace.

The Commission risks applying inconsistent and asymmetrical regulatory burdens in a convergent environment where firms offer a bundle of different services that include video. Because the FCC perceives the telephony business as competitive, when telephone companies offer a "triple-play" package of voice, Internet access, and video programming, the Commission has largely abandoned regulation.[18] But because the FCC still perceives the cable television business as dominated by vertically-integrated ventures, the Commission retains and possibly expands its regulatory oversight[19] despite expressing the need to ensure parity of regulatory burdens on competitors.[20]

Normal governmental checks and balances often do not detect instances where the FCC has deliberately or inadvertently failed to compile a credible record. Many reviewing courts gladly defer to the FCC's "expertise" rather than appear to second guess or to legislate from the bench in highly technical matters.[21] Courts also allow the FCC to extend its regulatory wingspan by claiming "ancillary jurisdiction"[22] to

data shows that 71.4 percent of households passed by cable systems offering 36 or more channels subscribe to these systems.").

18. Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities, *Report & Order & Notice of Proposed Rulemaking*, 20 FCC Rcd. 14,853, 14,878 (2005), *petition for review denied by* Time Warner Telecom, Inc. v. FCC, 507 F.3d 205 (3d Cir. 2007); Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks, *Declaratory Ruling*, 22 FCC Rcd. 5901 (2007).

19. *See, e.g.*, Cablevision Sys. Corp. v. FCC, 570 F.3d 83 (2d Cir. 2009) (affirming FCC-ordered carriage of upstate New York broadcast station by Long Island cable system), *petition for cert. filed*, 78 USLW 3454 (Jan 27, 2010) (NO. 09-901); Comcast Corp. v. FCC, 579 F.3d 1 (D.C. Cir. 2009) (vacating FCC reimposition of a 30 percent cap on national market penetration by a single cable television venture); Nat'l Cable & Telecomms. Ass'n v. FCC, 567 F.3d 659 (D.C. Cir. 2009) (affirming FCC decision prohibiting cable television ventures from securing exclusive service agreements with owners of multiple dwelling units); Alliance for Cmty. Media v. FCC, 529 F.3d 763 (6th Cir. 2008) (affirming comprehensive FCC rules affecting the timing, scope, and nature of local franchising authority regulations).

20. Ironically, the FCC has expressed deep concern about level competitive playing fields: "[i]n an environment of increasingly competitive bundled service offerings, the importance of regulatory parity is particularly compelling in our determination to remove this impediment to fair competition." Promotion of Competitive Networks in Local Telecomms. Markets, *Report & Order*, 23 FCC Rcd. 5385, 5387 (2008).

21. *See, e.g.*, Am. Family Ass'n, Inc. v. FCC, 365 F.3d 1156, 1166 (D.C. Cir. 2004) (noting the Commission's "necessarily wide latitude to make policy based on predictive judgments deriving from [the Commission's] general expertise").

22. "Ancillary jurisdiction may be employed, in the Commission's discretion, when Title I of the Act gives the Commission subject matter jurisdiction over the service to be regulated and the assertion of jurisdiction is 'reasonably ancillary to the effective performance of [its] various responsibilities.'" IP-Enabled Services, WC Docket No. 04-36, E911 Requirements for IP-Enabled Service Providers, WC Docket No. 05-196, *First Report & Order & Notice of Proposed Rulemaking*,

oversee practices that do not trigger a direct statutory mandate, but which arguably fit within a broad conferral of jurisdiction to achieve public interest goals relating to the activities of ventures using wire and radio communications.

Additionally, the Supreme Court has ruled that, absent a legislative mandate requiring the FCC to guard against anticompetitive practices, courts lack jurisdiction to order remedies that the Commission has refused to impose.[23] One court accepted the FCC's arguments that data about commercial ventures' decisions not to provide broadband service in specific localities constituted a business trade secret thereby prohibiting the FCC from public disclosure.[24] Arguably, a carrier's decision not to serve a specific locality strongly indicates market failure, which should require heightened scrutiny in view of the legislative goal to achieve universal access to basic and advanced telecommunications services.

Too often, the FCC reaches policy conclusions based on statistical interpretations that do not make sense and do not have corroboration through peer review, a process that the Commission has a conditional obligation to use,[25] but rarely does so.[26] For example, the FCC first concluded that pay-per-channel, "à la carte" access to cable television programming, would not save consumers' money compared to a packaged bundle of channels.[27] However, the Commission quickly

---

20 FCC Rcd. 10,245, 10,261 (2005) (citing United States v. Sw. Cable Co., 392 U.S. 157, 177–78 (1968); United States v. Midwest Video Corp., 406 U.S. 649, 667–68 (1972), and FCC v. Midwest Video Corp., 440 U.S. 689, 700 (1979)). *See also*, Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities, *Policy Statement*, 20 FCC Rcd. 14,986 (2005) (asserting Title I authority to issue policies pertaining to Internet services not subject to Title II telecommunications service regulation); Madison River LLC and Affiliated Companies, *Order*, 20 FCC Rcd. 4295 (2005) (adopting a consent whereby a provider of DSL service agreed to a $15,000 forfeiture and to refrain from blocking subscriber access to Voice over the Internet Protocol services); *see also* Rob Frieden, *What Do Pizza Delivery and Information Services Have in Common? Lessons From Recent Judicial and Regulatory Struggles with Convergence*, 32 RUTGERS COMP. & TECH L.J. 247, 276 (2006).

23. Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398 (2004); Pac. Bell Tel. Co. v. Linkline Commc'ns, Inc., No. 07-512, 2009 U.S. LEXIS 1635 (U.S. February 25, 2009).

24. Ctr. for Pub. Integrity v. FCC, 505 F. Supp. 2d 106 (D.D.C. 2007), *reconsideration denied*, 515 F. Supp. 2d 167 (D.D.C. 2007).

25. *See* Final Information Quality Bulletin for Peer Review, 70 FED. REG. 2664 (Jan. 14, 2005). For all of fiscal year 2008, the FCC Peer Review Agenda web page identified one such study. *See* FCC Peer Review Agenda, *available at* http://www.fcc.gov/omd/dataquality/peer-agenda.html.

26. The FCC appears to interpret its peer review obligation as limited to matters that involve technical or scientific determinations. "We note that if the Commission determines to rely on a scientific or technical study (or studies) as a basis for its decision-making in this proceeding, such study (or studies) may need to meet any applicable peer review requirements set forth in the Peer Review Bulletin issued by the Office of Management and Budget (OMB)." Effects of Commc'ns Towers on Migratory Birds, *Notice of Proposed Rulemaking*, 21 FCC Rcd. 13,241, 13,257 n.105 (2006).

27. FCC, REPORT ON THE PACKAGING AND SALE OF VIDEO PROGRAMMING SERVICES TO THE PUBLIC (2004), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-

reversed itself with limited explanation for its change in findings.[28] The Commission also erected a media diversity index to support relaxation of a cap on media ownership that a reviewing court rejected based on the lack of supporting evidence.[29] Only after a stinging judicial rebuke did the FCC think to subject its statistical analysis and modeling to external review from unaffiliated experts, rather than simply rely on the research and findings sponsored by stakeholders with a financial interest in the Commission's decisions.[30]

This article will identify several instances where the FCC could have used empirical research and peer review to ascertain whether a telecommunications market operates competitively. The article concludes that political sensitivity, deregulatory zeal, and wishful thinking motivate the FCC to abandon oversight, as evidenced by flawed statistical compilation and analysis, excessive reliance on advocacy documents generated by researchers sponsored by major stakeholders, and findings unsupported by evidence and not corroborated through peer review. The article will suggest ways the Commission could have avoided judicial reversal and public ridicule if it had used accepted social scientific practices and compiled an evidentiary record with an open mind.

I.   A POLITICIZED AGENCY

Congress created the FCC as an expert and independent regulatory agency not only with an obligation to implement congressional intent, but also to serve the public interest.[31] In 2010, the FCC had an annual budget of approximately $335.7 million and a staff numbering 1905.[32]

254432A1.pdf.

28. FCC, FURTHER REPORT ON THE PACKAGING AND SALE OF VIDEO PROGRAMMING SERVICES TO THE PUBLIC (2006), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-263740A1.pdf; *see also* Charles B. Goldfarb. Congressional Research Service, The FCC's "ala Carte" Reports (March 30, 2006).

29. Prometheus Radio Project v. FCC, 373 F.3d 372, 382 (3d Cir. 2004), *cert. denied*, 545 U.S. 1123 (2004).

30. *See* FCC, Media Bureau, Peer Review, *available at* http://www.fcc.gov/mb/peer_review/peerreview.html.

31. 47 U.S.C. §157(b) (1994) ("The Commission shall determine whether any new technology or service proposed in a petition or application is in the public interest within one year after such petition or application is filed. If the Commission initiates its own proceeding for a new technology or service, such proceeding shall be completed within 12 months after it is initiated."). 47 U.S.C. §160(b) (1996) ("If the Commission determines that such forbearance will promote competition among providers of telecommunications services, that determination may be the basis for a Commission finding that forbearance is in the public interest."). 47 U.S.C. §161(b) (1996) ("The Commission shall repeal or modify any regulation it determines to be no longer necessary in the public interest."). 47 U.S.C. §201(b) (1938) ("The Commissioner may prescribe such rules and regulations as may be necessary in the public interest to carry out the provisions of this chapter.").

32. FCC, FY 2011 BUDGET ESTIMATES SUBMITTED TO CONGRESS 7 (Feb. 2010), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-296111A1.pdf.

Many of the key staff, including the core group of advisors to the FCC Commissioners, are not civil service employees, but acquire employment on terms that contemplate a limited period of employment. Increasingly, FCC Commissioners select advisors with experience on Capitol Hill as Committee counsel or advisors to individual Senators and Representatives, due to the increasingly politicized nature of policy matters.[33]

Even with such a political umbrella, one would think that the Commission could use its considerable staff resources to undertake a professional and thorough analysis of public policy issues, as augmented by data collection and solicitation of comments from interested parties. Instead, the FCC relies almost exclusively on stakeholder data reporting, as well as the comments and sponsored research of these groups. The Commission does not generate much internal policy research,[34] nor does it typically sponsor such research from neutral third parties. Additionally the FCC refrains from collecting data it considers intrusive or burdensome, and the Commission takes pains to redact, or refrain from disclosing[35] data that the reporting parties consider proprietary or qualifying for trade secret protection.[36]

---

33. *See, e.g.*, FCC, Commissioner Robert M. Mcdowell Announces Staff Change (Sep. 18, 2009) (2009 WL 2997593) (announcing appointment of Christine Kurth as Policy Director and Wireline Counsel) ("She was most recently Republican Staff Director and General Counsel for the U.S. Senate Committee on Commerce, Science and Transportation and joined the Committee in 2005 as Deputy Staff Director. For the last six years of her Capitol Hill career, she has led or been intimately involved in drafting and negotiating legislation to keep up with the ever-changing communications landscape.").

34. In the rare instance where Commission staff had generated studies, the FCC had to conduct an investigation into whether senior management ordered staffers to suppress or destroy data that did not support a desired outcome. REPORT OF INVESTIGATION INTO ALLEGATIONS THAT SENIOR MANAGEMENT ORDERED RESEARCH SUPPRESSED OR DESTROYED, 2007 WL 2903894 at *18 (2007). *Cf.* UNITED STATES HOUSE OF REPRESENTATIVES, COMMITTEE ON ENERGY AND COMMERCE, DECEPTION AND DISTRUST: THE FEDERAL COMMUNICATIONS COMMISSION UNDER CHAIRMAN KEVIN J. MARTIN (2008), *available at* http://energycommerce.house.gov/images/stories/Documents/PDF/Newsroom/fcc%20majority%20 staff%20report%20081209.pdf ("We have found no evidence of a pattern or practice of any commissioner or anyone in the Commission's senior management to suppress reports, facts, analysis, or any other material because it was contrary to a result desired by that person. We investigated the leads relating to possible suppressions of reports, facts, analysis or other material and did not find evidence of such suppression. Although we did not have the time or resources to examine fully the two isolated historical instances of possible suppression that were mentioned to us, we did not find even the suggestion of a pattern of practice of suppression by any commissioner or anyone in senior management, now or in the past.").

35. "Filers may submit a request that information in a Form 477 submission not be made routinely available for public inspection by so indicating in item (9) of the filer identification information for that submission." FCC Form 477, Instructions for September 1, 2009 Filing, OMB No.: 3060-0816, *available at* http://www.fcc.gov/Forms/Form477/477inst.pdf. *See also* 47 C.F.R. §§ 0.457, 0.459, 1.7001(d), 43.11(c); Examination of Current Policy Concerning the Treatment of Confidential Info. Submitted to the Comm'n, *Report & Order*, 13 FCC Rcd. 24,816 (1998).

36. *See, e.g.*, Applications of Cellco P'ship d/b/a Verizon Wireless & Atlantis Holdings LLC

The Commission's inability to collect and analyze data, without the assistance of the businesses it regulates, juxtaposes with the fact that data collection constitutes an essential component in compiling a complete, factual record. If the FCC wants to confirm that the telecommunications marketplace has become so competitive that the Commission can further deregulate, then statistics could offer empirical corroboration. Rather than compile and disclose statistics with an open mind whether the data will support a preferred conclusion, the FCC appears to frame and interpret statistics with a predetermined outcome in mind, viz. the telecommunications marketplace operates so competitively that the Commission can continue on its deregulatory glide path, approve any merger application despite its market consolidating effect, and report to Congress that almost every sector in the telecommunications industry offers U.S. consumers best in class services with superior accessibility and affordability. The FCC can overstate the degree of competition and achievement of its public interest service mandate largely because the Commission relies on the comments and other filings of stakeholders who share the Commission's interest in touting what a great job it has done in serving the public interest.

II. MOST TELECOMMUNICATIONS ISSUES REQUIRE DATA COLLECTION

The FCC repeatedly makes self-serving and broad, sweeping conclusions about the state of the telecommunications marketplace without including comprehensive empirical evidence to support its conclusions. For example, despite a congressional decision in 2009 to allocate $7.2 billion to promote greater availability of broadband services in the United States,[37] the FCC has stated that "advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion."[38] In the wireless telecommunications marketplace the FCC states that "[n]o single competitor has a dominant share of the market,"[39] yet the Commission's own statistics show the four

---

for Consent to Transfer Control of Licenses, Authorizations, & Spectrum Manager & *de Facto* Transfer Leasing Arrangements & Petition for Declaratory Ruling that the Transaction is Consistent with Section 310(b)(4) of the Commc'ns Act, *Protective Order*, 23 FCC Rcd. 11,154 (2008) (agreeing to treat as confidential data filed to support acquisition of a competitor).

37. *See* American Recovery & Reinvestment Act of 2009, Pub. L. No. 111-005 (codified in scattered sections of U.S.C.), *available at* http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h1enr.txt.pdf.

38. Inquiry Concerning the Deployment of Advanced Telecomms. Capability to All Ams. in a Reasonable & Timely Fashion, & Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecomms. Act of 1996, *Fifth Report*, 23 FCC Rcd. 9615, ¶ 1 (2008), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-08-88A1.pdf.

39. Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, *Thirteenth Report*, 24 FCC Rcd. 6185, 6190 (2009), *available at* http://hraunfoss.fcc.gov/

national carriers control over 87 percent of the market with Verizon controlling 30.1 percent of the national market and AT&T controlling 26.6 percent.[40] The Commission appears to interpret the statistics it compiles in the most positive light to support inferences of ample and ubiquitous competition.[41]

The FCC must engage in transparent and fair-minded data collection, because many of the issues the Commission addresses have a quantitative component that can provide evidence supporting compliance with legislative mandates. For example, Section 706 of the Telecommunications Act, as amended, requires the FCC to encourage the deployment, on a reasonable and timely basis, of advanced telecommunications capability to all Americans and to initiate a Notice of Inquiry to determine the availability of such services.[42] More generally, the FCC has congressional reporting requirements ostensibly established to keep legislators apprised of current marketplace conditions in such sectors as video programming delivery,[43] wireless telecommunications,[44] satellite services,[45] and access to advanced telecommunication

edocs_public/attachmatch/DA-09-54A1.pdf [hereinafter *Thirteenth CMRS Report*].

40. *Id*. at 138 (Table A-4: Top 20 Mobile Telephone Operators by Subscribers (with publicly-available subscriber counts, in thousands)). *See also*, Applications of Cellco Partnership d/b/a Verizon Wireless & Atlantis Holdings LLC for Consent to Transfer Control of Licenses, Authorizations, & Spectrum Manager and *de Facto* Transfer Leasing Arrangements & Petition for Declaratory Ruling that the Transaction is Consistent with Section 310(b)(4) of the Commc'ns Act, 23 FCC Rcd. 17,444 (2008) (approving Verizon's acquisition of Alltel subject to market specific divestitures). *See also infra* note 106.

41. *See* Frieden, *supra* note 10.

42. 47 U.S.C. §1302 (2008) (transferred from Telecommunications Act of 1996, Pub. L. No. 104-104, § 706 (2008)).

43. *See Thirteenth Annual Video Programming Report*, *supra* note 17, at 545 ("We find that almost all consumers are able to obtain programming through over-the-air broadcast television, a cable service, and at least two DBS providers. In some areas, consumers also may have access to video programming delivered by emerging technologies, such as digital broadcast spectrum, fiber-to-the-home facilities, or web-based Internet video. In addition, through the use of advanced set-top boxes and digital video recorders, and the introduction of new mobile video services, consumers are now able to exercise more control over what, when, and how they receive information. Further, MVPDs of all kinds are offering nonvideo services in conjunction with their traditional video services."). *See also*, Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, *Notice of Inquiry*, 24 FCC Rcd. 750 (2009); Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, *Supplemental Notice of Inquiry*, 24 FCC Rcd. 4401 (2009).

44. Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, 24 FCC Rcd. at 6188 ("The metrics below indicate that there is effective competition in the CMRS market and demonstrate the increasingly significant role that wireless services play in the lives of American consumers.").

45. *See* Second Annual Report & Analysis of Competitive Market Conditions with Respect to Domestic & International Satellite Communications Services, *Second Report*, 23 FCC Rcd. 15,170, 15,201 (2008) ("We find in this Second Report, as we did in the First Report, that markets for commercial communications satellite services are subject to effective competition, notwithstanding certain structural changes in the communications satellite industry since the release of the First Report. Additionally, consumers of communications satellite services continue to realize significant

capabilities.[46]

If the FCC did not have ulterior motives in mind, the duty to promote access to advanced telecommunications capabilities, including information services like Internet access, would motivate the Commission to collect quite specific data about broadband market penetration. The more granular the data, the better the Commission can identify specific geographical locales where residents have limited access to advanced services, or carriers offering such services charge unaffordable rates. Instead, the FCC appears to have defined broadband at such a low level of performance and speed with an eye toward overstating the degree of current progress in achieving ubiquitous access. Belated efforts to narrow the geographical range of a specific locality examined, and to create multiple categories of broadband bitrates offer some confirmation of this assertion,[47] as the FCC acts on the obvious need to generate and to disclose more granular broadband penetration data.

Historically, the FCC has actively engaged in data collection and quantitative market assessment, with an eye toward establishing caps on market concentration, as well as limits on vertical and horizontal integration by individual companies due to concerns about the potential for market domination by individual firms in the absence of robust competition. Now convinced that it should relax ownership and marketplace restrictions, the Commission has changed its numerical caps or abandoned them entirely based upon non-quantifiable conclusions about the current or future onset of increased competition.[48] Some

net benefits in terms of service choice, innovations fostered by technological change and improvements in both space and ground segment, and improvements in service quality. Observed metrics of market performance are consistent with good market performance, recognizing the constraints imposed by industry cost structure and persistent excess capacity."). *See also*, FCC Report to Congress as Required by the ORBIT Act, *Tenth Report*, 2009 WL 1674896 (June 15, 2009).

46. *See* FCC, INDUSTRY ANALYSIS & TECHNOLOGY DIVISION WIRELINE COMPETITION BUREAU, HIGH-SPEED SERVICES FOR INTERNET ACCESS: STATUS AS OF DEC. 31, 2008, *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-296239A1.pdf.

47. Development of Nationwide Broadband Data to Evaluate Reasonable & Timely Deployment of Advanced Services to All Ams., Improvement of Wireless Broadband Subscribership Data, & Development of Data on Interconnected Voice Over Internet Protocol (VOIP) Subscribership, *Report & Order & Further Notice of Proposed Rulemaking*, 23 FCC Rcd. 9691 (2008), *partial recon.*, 23 FCC Rcd. 9800 (2008).

48. 2002 Biennial Regulatory Review—Review of the Commission's Broadcast Ownership Rules and Other Rules Adopted Pursuant to Section 202 of the Telecommunications Act of 1996, *Report & Order & Notice of Proposed Rulemaking*, 18 FCC Rcd. 13,620, 13,623 (2003), *aff'd in part and remanded in part*, Prometheus Radio Project v. FCC, 373 F.3d 372, 395-397 (3d Cir. 2004), *cert. denied* 545 U.S. 1123 (2004) ("Nonetheless, while the march of technology has brought to our homes, schools, and places of employment unprecedented access to information and programming, our broadcast ownership rules, like a distant echo from the past, continue to restrict who may hold radio and television licenses as if broadcasters were America's information gatekeepers. Our current rules inadequately account for the competitive presence of cable, ignore the diversity-enhancing

reviewing courts have chided the FCC for insufficiently examining the marketplace consequences of initiatives to relax ownership[49] and other restrictions.[50]

---

value of the Internet, and lack any sound basis for a national audience reach cap. Neither from a policy perspective nor a legal perspective can rules premised on such a flawed foundation be defended as necessary in the public interest. Not surprisingly, therefore, several of the existing rules have been questioned, reversed, and in some cases vacated by the courts. Our current rules are, in short, a patchwork of unenforceable and indefensible restrictions that, while laudable in principle, do not serve the interests they purport to serve.").

49. *Prometheus Radio Project*, 373 F.3d at 395 ("Though our standard of review analysis is lengthy, it is in the end amenable to a straightforward summing-up: In a periodic review under § 202(h), the Commission is required to determine whether its then-extant rules remain useful in the public interest; if no longer useful, they must be repealed or modified. Yet no matter what the Commission decides to do to any particular rule-retain, repeal, or modify (whether to make more or less stringent)-it must do so in the public interest and support its decision with a reasoned analysis. We shall evaluate each aspect of the Commission's Order accordingly."). *Id.* at 402-03 ("But for all of its efforts, the Commission's Cross-Media Limits employ several irrational assumptions and inconsistencies. We do not object in principle to the Commission's reliance on the Department of Justice and Federal Trade Commission's antitrust formula, the Herfindahl-Hirschmann Index ('HHI'), as its starting point for measuring diversity in local markets. In converting the HHI to a measure for diversity in local markets, however, the Commission gave too much weight to the Internet as a media outlet, irrationally assigned outlets of the same media type equal market shares, and inconsistently derived the Cross-Media Limits from its Diversity Index results. For these reasons, detailed below, we remand for the Commission to justify or modify further its Cross-Media Limits."). *Id.* at 411 ("Although the Commission is entitled to deference in deciding where to draw the line between acceptable and unacceptable increases in markets' Diversity Index scores, we do not affirm the seemingly inconsistent manner in which the line was drawn. As the chart above illustrates, the Cross-Media Limits allow some combinations where the increases in Diversity Index scores were generally higher than for other combinations that were not allowed . . . . The Commission's failure to provide any explanation for this glaring inconsistency is without doubt arbitrary and capricious, and so provides further basis for remand of the Cross-Media Limits."). *See also* 2006 Quadrennial Regulatory Review—Review of the Comm'n's Broadcast Ownership Rules & Other Rules Adopted Pursuant to Section 202 of the Telecomms. Act of 1996, *Report & Order & Order on Reconsideration*, 23 FCC Rcd. 2010 (2008).

50. In *Schurz Commc'ns, Inc. v. FCC*, 982 F.2d 1043 (7th Cir. 1992), the Seventh Circuit rejected the FCC's attempt to modify rules designed to limit broadcast networks' control of programming aired by affiliates, including a rule limiting to 40 percent how much of a network's own prime-time entertainment schedule may consist of programs produced by the network itself. The court strongly admonished the FCC:

> The Commission's articulation of its grounds is not adequately reasoned. Key concepts are left unexplained, key evidence is overlooked, arguments that formerly persuaded the Commission and that time has only strengthened are ignored, contradictions within and among Commission decisions are passed over in silence. The impression created is of unprincipled compromises of Rube Goldberg complexity among contending interest groups viewed merely as clamoring suppliants who have somehow to be conciliated. The Commission said that it had been "confronted by alternative views of the television programming world so starkly and fundamentally at odds with each other that they virtually defy reconciliation" (emphasis added). The possibility of resolving a conflict in favor of the party with the stronger case, as distinct from throwing up one's hands and splitting the difference, was overlooked. The opinion contains much talk but no demonstration of expertise, and a good deal of hand-wringing over the need for prudence and the desirability of avoiding "convulsive" regulatory reform, yet these unquestioned goods are never related to the particulars of the rules-rules that could have a substantial

In contrast, the FCC has tried to justify more regulation based on industry concentration in the cable television marketplace. Even as the FCC generally attempts to justify less restrictions on most stakeholders, a former Chairman sought to expand the scope of regulation based on questionable data allegedly confirming that the cable industry had reached a market domination threshold of serving at least 70 percent of the population with at least 70 percent of those people with access to cable actually subscribing.[51] This so-called 70/70 rule seems straightforward and easily calculated: to justify more intrusive and ostensibly public interest serving government oversight of the cable industry, the FCC need only compile market penetration statistics and report if and when market penetration triggered both 70 percent thresholds. Regrettably, the FCC either could not compile such data or simply had not done so even though former FCC Chairman Kevin Martin insisted that a commercial venture's data collection confirmed that the cable industry had exceeded both thresholds.[52] Apparently it did not matter that cable television market penetration statistics, even those contemporaneously compiled by the FCC, showed declining market share in the video programming distribution market, as a result of increasing market share held by two Direct Broadcast Satellite operators and recent market entry by incumbent telephone companies such as Verizon and AT&T.[53]

Even as the FCC uses market penetration data to tweak regulation, the Commission typically avoids burdening stakeholders with data reporting obligations or subjecting such data to public scrutiny. The Commission has accepted the view that knowing whether a particular Internet Service Provider (ISP) serves a locality constitutes a trade secret.[54] One would think that if a venture opts not to serve a specific

---

impact on an industry that permeates the daily life of this nation and helps shape, for good or ill, our culture and our politics. The Commission must do better in articulating their justification.

Id. at 1050.

51. Section 612(g) of the Communications Act of 1934, as amended, provides that when "cable systems with 36 or more activated channels are available to seventy percent of households within the United States" and when seventy percent of those households subscribe to them, "the Commission may promulgate any additional rules necessary to promote diversity of information sources."

52. *See Thirteenth Annual Video Programming Report*, *supra* note 17.

53. Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, *Twelfth Annual Report*, 21 FCC Rcd. 2503, 2507 (2006) ("Data submitted in the record this year raises questions as to whether the so-called '70/70 test' has been satisfied. Accordingly, the Commission is seeking further public comment on the best methodologies and data for measuring the 70-percent thresholds and, if the thresholds have been met, what action might be warranted to achieve the statutory goals.").

54. Ctr. for Pub. Integrity v. FCC, 505 F. Supp. 2d 106 (D.D.C. 2007) (affirming the FCC's determination that location of service by a specific venture constitutes a trade secret).

locality, this decision results from a commercial determination that service would generate insufficient revenues. In light of the FCC's Section 706 obligation to identify areas unserved or underserved by ISPs, arguably the lack of available service options should trigger concern about whether residents in such localities need regulatory intervention, possibly including subsidized access to broadband services.

III.   THE FCC GENERALLY USES COLLECTED OR SUBMITTED DATA AND STATISTICS TO JUSTIFY A DESIRED OUTCOME

A.   *Regulatory Forbearance*

As authorized by Section 10 of the Telecommunications Act of 1996 ('96 Act), the FCC, on its own initiative or based on a stakeholder's application, shall forbear from regulating when justified by marketplace conditions and the public interest.[55] Incumbent wireline telephone companies have aggressively sought such deregulation based on the simple premise that they face facilities-based competition. For the FCC to comply with Section 10 of the '96 Act, the Commission must compile empirical evidence that corroborates the applicants' assertions about robust and sustainable competition. Instead, the FCC has relied on the prospect of competition, or based its decision to deregulate on market entry by as few as one facilities-based carrier.

In 2005, the FCC partially granted Qwest's request to forbear from applying price cap, rate of return, tariffing, and 60-day discontinuance regulations for interstate mass market exchange access services and mass market broadband Internet access services in Omaha, Nebraska. The Commission willingly eliminates traditional regulatory safeguards when true and robust facilities-based competition[56] exists: "Through this

---

55. The Telecommunications Act of 1996 requires the FCC to forbear from any statutory provision or regulation if the Commission determines that: (1) enforcement of the regulation is not necessary to ensure that charges and practices are just and reasonable, and are not unjustly or unreasonably discriminatory; (2) enforcement of the regulation is not necessary to protect consumers; and (3) forbearance is consistent with the public interest. 47 U.S.C. § 160(a) (2008). In making such determinations, the Commission must also consider "whether forbearance from enforcing the provision or regulation will promote competitive market conditions." 47 U.S.C. § 160(b). Section 10(d) specifies, however, that "[e]xcept as provided in section 251(f), the Commission may not forbear from applying the requirements of section 251(c) or 271 . . . until it determines that those requirements have been fully implemented." 47 U.S.C. § 160(d).

56. Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Omaha Metropolitan Statistical Area, WC Docket No. 04-223, *Memorandum Opinion & Order*, 20 FCC Rcd. 19,415, 19,432–33 (2005), *aff'd*, Qwest Corp. v. FCC, 482 F.3d 471 (D.C. Cir. 2007) ("The record of competition compiled in this proceeding and, significantly, the other market-opening regulations that we leave in place today, support our finding that supply elasticity in this market is high for all mass market services. Cox's extensive facilities build-out in the Omaha MSA, and growing success in luring Qwest's mass market customers, indicates that . . . [ample facilitates-based competition exists] for both switched access and broadband Internet access services.").

Order, we show that we are ready and willing to step aside as regulators and let market forces prevail where facilities-based competition is robust."[57]

Even as the FCC recognized that robust, facilities-based competition does not actually exist,[58] the Commission nevertheless offered some deregulatory relief.

The Commission later thought to consider whether facilities-based competition exists for all necessary elements, including the first and last mile links to end users. Based on that consideration and new found interest in incumbent and market entrant market share, the FCC has recently rejected some forbearance petitions, even for major urban areas most likely to have the greatest degree of competition.[59]

Verizon appealed the Commission's rejection of forbearance petitions based on the perception that the FCC used different evaluative criteria for assessing the sufficiency of competition. The D.C. Circuit agreed that the Commission had to explain in greater detail how and why it changed its evaluative criteria. This case highlights a remarkable paradox: in 2005 the FCC could use the prospect of facilities-based competition, based on market entry by a single cable television competitor, to justify some regulatory forbearance of the incumbent carrier's local business services in Omaha, Nebraska. Two years later, the FCC belatedly thought to consider some aspects as to whether such competition could remain sustainable, even for the largest cities in the United States. This decision to require clearer evidence of competition triggered a judicial remand.

How the FCC treats regulatory forbearance petitions shows that the Commission has not established clear and consistent evidentiary requirements.[60] On one hand, the FCC got away with using general,

---

57. *Id.* at 19,416.

58. *Id.* at 19,457 ("Even Cox, which is the competitive LEC with the most extensive facilities-based coverage in Qwest's territory in the Omaha MSA, depends on Qwest for interconnection, collocation, and reasonable notice of changes in Qwest's network in order to exchange telecommunications traffic in the Omaha MSA. Cox reports that approximately [REDACTED] percent of all the traffic that it sends and receives in the Omaha MSA depends on section 251(c)(2) interconnection and collocation—the effectiveness of which depends in part on reasonable notice of network changes.").

59. Petition of Verizon Telephone Companies for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Boston, New York, Philadelphia, Pittsburgh, Providence & Virginia Beach Metropolitan Statistical Areas, Inc., WC Docket No. 06-172, *Memorandum Opinion & Order*, 22 FCC Rcd. 21,293 (2007), *remanded by* Verizon Tel. Cos. v. FCC, 570 F.3d 294 (D.C. Cir. 2009).

60. The Commission acknowledges this in a Report and Order establishing more specific criteria for evaluating forbearance petitions:

> We acknowledge that we have not previously required petitioners to specify in the petition how the requested relief meets each of the three forbearance criteria, and that a requirement to do so will burden applicants to the extent that they must develop their supporting arguments in advance of filing. We do not, however, consider this an

non-specific indications that competition might exist, without any proof that such competition would prove longstanding and offer consumers real service alternatives. Businesses with heavy telecommunications requirements have complained that competition has not flourished particularly for "middle mile" links between several geographically diverse facilities in a metropolitan area. However, an appellate court accepted the Commission's conclusion that incumbent carriers offered reasonable rates.[61] Remarkably, the FCC's effort to require more granular and specific evidence of competition triggered a remand based on the Commission's failure to provide sufficient notice and explanation for its decision to require more specific evidence of sufficient competition.[62]

B.   *The Absence of an Antitrust Remedy*

In two cases, the Supreme Court has all but eliminated the possibility that a court can offer a remedy to anticompetitive practices should the FCC fail to do so. The Court has concluded that, because industry sector-specific legislation provides the FCC with authority to craft regulatory remedies when the Commission refuses to act, appellate

---

> unreasonable expectation, and we find that the benefit to both commenters and the
> Commission of clarity and precision outweighs the burden on the petitioner of explaining
> how forbearance from each regulation or statutory provision meets each prong.

Petition to Establish Procedural Requirements to Govern Proceedings for Forbearance Under Section 10 of the Commc'ns Act of 1934, as Amended, *Report & Order*, FCC 09-56, 2009 WL 1856503, ¶ 14 (June 29, 2009) [hereinafter *Section 10 Procedural Requirements Report & Order*].

61. Ad Hoc Telecomms. Users Comm. v. FCC, 572 F.3d 903, 908 (D.C. Cir. 2009) (citing EarthLink, Inc. v. FCC, 462 F.3d 1, 12 (D.C. Cir. 2006)) ("Our task on review is therefore limited. We review the FCC's action in this case only to ensure that it is not 'arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.' 5 U.S.C. § 706(2)(A). That standard is particularly deferential in matters such as this, which implicate competing policy choices, technical expertise, and predictive market judgments."); *see also* Time Warner Telecom, Inc. v. FCC, 507 F.3d 205, 221 (3d Cir. 2007).

62. In 2009 the FCC belatedly specified the documentation petitioners must submit:

> A petition for forbearance must include in the petition the facts, information, data, and
> arguments on which the petitioner intends to rely to make the prima facie case for
> forbearance. Specifically, the prima facie case must show in detail how each of the
> statutory criteria are met with regard to each statutory provision or rule from which
> forbearance is sought. A petition for forbearance must take into account relevant
> Commission precedent. If the petitioner intends to rely on data or information in the
> possession of third parties, the petition must identify the data or information, and the
> parties that possess it, and explain the relationship of the information to the prima facie
> case. When the petition is filed at the Commission, the petitioner must provide a copy of
> it to each party identified as possessing relevant data or information, and the relevant
> Bureau will respond to requests for third-party discovery on a case-by-case basis. Other
> than third-party information, a petition may not rely on data or information that is not
> made available, without charge, to the Commission staff and interested parties that agree
> to comply with any protective orders the Commission issues in the course of the
> proceeding. We find broad support for requiring petitioners to state a prima facie case.

Section 10 Procedural Requirements Report & Order, *supra* note 60, at ¶17.

courts have no legal basis for imposing additional antitrust safeguards.[63]

The Supreme Court's deference to the FCC has gone so far as to allow an incumbent carrier to offer end users lower rates than what it charges competitors, an apparent predatory and anticompetitive practice commonly referred to as a price squeeze.[64] In 2003, several ISPs filed suit against Pacific Bell Telephone Co., contending that this incumbent carrier attempted to monopolize the market for Digital Subscriber Line (DSL) broadband Internet access by creating a price squeeze with ISP competitors obligated to pay a higher wholesale price than what Pacific Bell offered on a retail basis. Both the District Court and the Ninth Circuit Court of Appeals agreed that the ISPs could present their price squeeze claim, despite the Supreme Court's *Trinko* decision that severely constrained the scope of antitrust remedies in lieu of, or in addition to, FCC regulatory safeguards.

The Court assumed that Pacific Bell had no antitrust duty to deal with any ISPs based on the FCC's premise that ample facilities-based competition exists and the Commission's refusal to order any remedy even when presented with clear evidence that Pacific Bell offered retail users rates below wholesale rates offered to competitors.[65] But for a voluntary concession to secure the FCC's approval of AT&T's acquisition of BellSouth, the Court noted that Pacific Bell would not even have a duty to provide ISPs wholesale services. The Court granted *certiorari* to resolve the question whether ISP plaintiffs can bring a price-squeeze claim under Section 2 of the Sherman Act when the defendant carrier has no antitrust-mandated duty to deal with the plaintiffs. The lower courts concluded that the *Trinko* precedent did not bar such a claim, but the Supreme Court reversed this holding.

On procedural grounds, the Court's decision upbraided the ISP plaintiffs for changing the nature of their claim from a price squeeze to one characterizing Pacific Bell's tactics as predatory pricing, which is a practice where one competitor charges below cost rates with an eye toward driving out competitors after which rates can rise. On substantive grounds, the Court noted that a new emphasis on predatory pricing would have required determination whether the retail price was set below cost, a claim the ISPs did not make.[66]

The Court determined that the case did not become moot, because

---

63. Verizon Commc'ns Inc. v. Law Office of Curtis V. Trinko, LLP, 540 U.S. 398 (2004).

64. Pac. Bell Tel. Co., v. Linkline Commc'ns, Inc., 2009 U.S. LEXIS 1635 (Feb. 25, 2009).

65. "DSL providers face stiff competition from cable companies and wireless and satellite services." *Id*. at *19 n.2.

66. The Court referenced *Brook Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993), that supports the inference that a predatory pricing claim can be established only with proof of below cost pricing coupled with evidence that the defendant can subsequently recoup any lost profits.

of the change in economic and antitrust arguments. However the decision evidences great skepticism whether the ISPs have any basis for a claim, because in the Court's reasoning the ISPs failed to make a claim that Pacific Bell's retail DSL prices were predatory, and the ISPs also failed to refute the Court's conclusion that Pacific Bell had no duty to deal with the ISPs, i.e., to provide cost-based wholesale service.[67] The Court apparently can ignore the voluntary concession AT&T made that created a duty to deal. Although that concession may trigger FCC oversight, it does not change whether an antitrust duty to deal arises. The Court reads the *Trinko* case as foreclosing any antitrust claim where no antitrust duty to deal exists.[68]

The Court remanded the case to the district court to determine whether the ISP plaintiffs have any viable predatory pricing claim. The Court expressed the need for clear antitrust rules and apparently views consumer access to low retail prices—predatory or not—as sufficient reason for courts to refrain from intervening. The Court does not seem troubled even if all ISP competitors exited the market, an event that surely would enable the surviving incumbent carrier to raise rates: "For if AT&T can bankrupt the plaintiffs by refusing to deal altogether, the plaintiffs must demonstrate why the law prevents AT&T from putting them out of business by pricing them out of the market."[69]

This case evidences a strong reluctance on the part of the Supreme Court to support any sort of judicial review over the pricing strategies of carriers and analysis of the FCC's determinations about the appropriateness of such prices and the viability of competition. Judicial deference to the FCC and the Commission's failure to detect and to remedy the price squeeze or predatory pricing surely will result in the near term elimination of competition unless ISPs quickly replace expensive leased lines with their own facilities, a desirable but commercially impractical goal at least in the short term. The FCC's assumptions about competition and its viability do not jibe with what incumbent carriers can do to drive competitors out of business if market entrants do not quickly install necessary infrastructure.

---

67. "The challenge here focuses on retail prices—where there is no predatory pricing—and terms of dealing where there is no duty to deal." *Linkline Commc'ns, 2009 U.S. LEXIS 1635, at *20.* "If there is no duty to deal at the wholesale level and no predatory pricing at the retail level, then a firm is certainly not required to price *both* of these services in a manner that preserves its rivals' profit margins." *Id.* at *25.

68. "In this case, as in *Trinko*, the defendant has no obligation under the antitrust laws to deal with the plaintiff at wholesale; any such duty arises only from FCC regulations, not from the Sherman Act." *Id.* at *20.

69. *Id.* at *33.

C.   Mergers and Acquisitions

With quite rare exceptions, the FCC has approved each and every merger application submitted to it for review in the last twenty years. The Commission can do so, despite initial opposition typically expressed by one or more Commissioners, by securing "voluntary" concessions from the acquiring company.[70] In reality, ventures sweeten their offer of prospective remedies for potential anticompetitive practices, or excessive market concentration, based on signals of distress made by individual Commissioners. The final FCC order approving the merger can identify the potential for risky vertical and horizontal market concentration, but dismiss concerns about the potential for adverse impact on competition thanks to safeguards largely offered by the acquiring firm,[71] or on some general view that the merged firm will robustly compete with other incumbent firms.[72]

Alternatively, the Commission approves an acquisition based on general notions that the acquiring and acquired parties did not compete with each other[73] or that, by using broad market definitions, the merged firm will not adversely impact the already robustly competitive marketplace. In the former, the FCC approved the merger of Intelsat and PanAmSat largely on grounds that, despite being two of the world's largest fixed satellite service providers, Intelsat offered international

---

70. *See* Sean M. Carroll, *Main Dish With a Side of Voluntary Commitments: Dish Network–DirecTV Revisited*, 61 ADMIN. L. REV. 661 (Summer 2009).

71. Applications for Consent to the Transfer of Control of Licenses XM Satellite Radio Holdings Inc., Transferor to Sirius Satellite Radio Inc., Transferee, *Memorandum Opinion & Order & Report & Order*, 23 FCC Rcd. 12,348, 12,352 (2008) ("Based on the record before us, we conclude that the proposed transfer of control would violate our rule against one licensee controlling both SDARS licenses. We also conclude that, absent Applicants' voluntary commitments and other conditions discussed below, the proposed transaction would increase the likelihood of harms to competition and diversity . . . . Applicants, however, have proposed significant voluntary commitments regarding steps the merged company would take to mitigate harms and achieve public interest benefits. We find that absent those voluntary commitments and other conditions, the harms of the transaction would outweigh the potential public interest benefits. On balance, however, we find that with Applicants' voluntary commitments and other conditions, the potential public interest benefits outweigh the harms.").

72. Sprint Nextel Corp. & Clearwire Corp. Applications for Consent to Transfer Control of Licenses, Leases, & Authorizations, *Memorandum Opinion & Order*, 23 FCC Rcd. 17,570, 17,572 (2008) (approving merger of two major wireless carriers Sprint-Nextel and Clearwire Corp.) ("We find that competitive harm is unlikely in any market, primarily because multiple other service providers in these markets would be an effective competitive constraint on the behavior of the merged entity. We also conclude that the transaction will result in major public interest benefits by facilitating the provision of a nationwide WiMAX-based network that will lead to increased competition, greater consumer choice, and new services.").

73. Applications Filed for the Transfer of Control of Embarq Corp. to Centurytel, Inc. *Memorandum Opinion & Order*, 24 FCC Rcd. 8741 (2009) ("This lack of present competition between these two incumbent LECs is hardly surprising both carriers largely serve rural local exchanges and the adjacent exchanges are almost all small and rural.").

services and PanAmSat largely served North America.[74] In the latter, the Commission approved the merger of the only two satellite-based, premium audio service providers largely based on the premise that a satellite monopoly would not harm consumers in light of their access to alternative sources of content, such as portable music players, terrestrial radio broadcasting, and compact discs.[75]

The FCC allowed two major telephone companies to merge largely on grounds that they did not compete with each other and based on the following beneficial outcomes that the $84.5 billion merger would accrue:

> Deployment of broadband throughout the entire AT&T-BellSouth in-region territory in 2007[;] Increased competition in the market for advanced pay television services due to AT&T's ability to deploy Internet Protocol-based video services more quickly than BellSouth could do so absent the merger[;] Improved wireless products, services and reliability due to the efficiencies gained by unified management of Cingular Wireless, which is now a joint venture operated by BellSouth and AT&T[;] Enhanced national security, disaster recovery and government services through the creation of a unified, end-to-end IP-based network capable of providing efficient and secure government communications[; and] Better disaster response and preparation from the companies because of unified operations. [76]

In all but one of the above anticipated benefits of the AT&T BellSouth merger, the FCC articulated general, not easily quantifiable public benefits. The inability to measure the benefits of this merger contrasts with the FCC's allegedly steadfast commitment to require merger applicants to bear the burden of explaining with specificity how the public benefits:

> The Commission applies several criteria in deciding whether a claimed benefit is cognizable. First, the claimed benefit must be transaction or merger specific (i.e., the claimed benefit "must be likely to be accomplished as a result of the merger but unlikely to be realized by other means that entail fewer anticompetitive effects").

---

74. Constellation, LLC, Carlyle Panamsat I, LLC, Carlyle Panamsat II, LLC, Pep Pas, LLC, & Peop Pas, LLC, Transferors, & Intelsat Holdings, Ltd., Transferee, Consolidated Application For Authority to Transfer Control of Panamsat Licensee Corp. & Panamsat H-2 Licensee Corp., *Memorandum Opinion & Order*, 21 FCC Rcd. 7,368 (2006).

75. Applications for Consent to the Transfer of Control of Licenses XM Satellite Radio Holdings Inc., Transferor, to Sirius Satellite Radio Inc., Transferee, 23 FCC Rcd. 12,348 (2008).

76. News Release, FCC, FCC Approves Merger of AT&T Inc. & Bellsouth Corporation, Significant Public Interest Benefits Likely to Result (Dec. 29, 2006), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-269275A1.pdf. *See also* AT&T Inc. & BellSouth Corp., Application for Transfer of Control, 22 FCC Rcd. 5662, 5760–72 (2007), *on partial recon.*, 22 FCC Rcd. 6285 (2007).

Second, the claimed benefit must be verifiable. Because much of the information relating to the potential benefits of a merger is in the sole possession of the Applicants, they are required to provide sufficient evidence supporting each claimed benefit to enable the Commission to verify its likelihood and magnitude. In addition, as the Commission has noted, "the magnitude of benefits must be calculated net of the cost of achieving them." Furthermore, the Commission will discount or dismiss speculative benefits that it cannot verify.[77]

In one of the only merger applications the FCC did not approve in the last two decades, the Commission stated that "benefits that are to occur only in the distant future may be discounted or dismissed because, among other things, predictions about the more distant future are inherently more speculative than predictions about events that are expected to occur closer to the present."[78]

AT&T secured FCC approval of the BellSouth acquisition by offering concessions and by later supplementing them. In a letter to the FCC on December 28, 2006, AT&T promised to make available broadband Internet access service by December 31, 2007 to 100 percent of the residential living units in the AT&T/BellSouth service regions, rollout of unregulated, fiber-based facilities reaching at least 1.5 million homes, price caps and discounting of high speed data transmission services and conditionally agreeing to comply with nondiscrimination principles for Internet services. Parties have disputed whether AT&T has achieved its promises, but the FCC has neither investigated nor sanctioned the company.[79]

The latter two commitments warrant closer scrutiny for two reasons: (1) an unprecedented statement by the FCC's two Republican Commissioners that neither they nor the FCC should hold AT&T to its pricing commitments which former Chairman Martin and Commissioner Tate consider the reimposition of price regulation and (2) the selective nature of AT&T's Internet service commitments. On the matter of AT&T's commitment to refrain from exercising deregulatory pricing flexibility it had previously secured from the FCC, Commissioners Martin and Tate stated that "even when AT&T attempts to fulfill its merger commitments by filing tariffs, the

---

77. Applications Filed for the Transfer of Control of Embarq Corp. to Centurytel, Inc., *Memorandum Opinion & Order*, 24 FCC Rcd. 8741, 8756 (2009) (internal citations omitted).

78. Application of Echostar Commc'ns Corp., General Motors Corp., & Hughes Electronics Corp. (Transferors) & Echostar Commc'ns Corp. (Transferee), *Hearing Designation Order*, 17 FCC Rcd. 20,559, 20,630–31 (2002) (designating a hearing to resolve issues pertaining to the public interest merits in the merger of two major direct broadcast satellite firms).

79. *See* FCC, AT&T Inc. & BellSouth Corporation, FCC Dkt. No. 06-74, http://www.fcc.gov/transaction/att-bellsouth.html (last visited Dec. 19, 2009).

Commission is not bound to approve these tariffs. Indeed, consistent with the Commission's prior policies and precedent, we would oppose such discriminatory practices and would encourage such tariffs to be rejected."[80]

AT&T's Internet nondiscrimination commitments appear generous until one considers the practical ramifications of the company's commitment. AT&T has committed to "conduct business in a manner that comports with the principles set forth"[81] in the Commission's network neutrality policy principles statement for 30 months running from the merger closing date.[82] However, AT&T limits its neutral network operation and routing commitment to its wireline broadband Internet access service—*e.g.*, Digital Subscriber Line service—and not to the fiber optic network that it increasingly will use for video and higher speed broadband service. Additionally, AT&T limits any network neutrality commitment to the pathway linking end users to the closest location where it receives and hands off Internet traffic with other carriers. These reservations provide AT&T with the means to operate next generation Internet networks with no network neutrality obligations, unless the FCC imposes requirements on all ISPs.

D.   *Relaxed Limits on Vertical and Horizontal Integration*

The FCC has incrementally relaxed limits on market penetration by a single company. Once again the Commission rationalizes such deregulation based on expanded competitive choice, despite evidence to the contrary in some instances.[83] The Third Circuit Court of Appeals in

---

80. Joint Statement of Chairman Kevin J. Martin & Commissioner Deborah Taylor Tate Re: *AT&T Inc. & BellSouth Corporation Application for Transfer of Control*, WC Docket No. 06-74 (Dec. 29, 2006), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-269275A2.doc.

81. Letter from Robert W. Quinn, Jr. AT&T Sr. Vice President Federal Regulatory (Dec. 28, 2006) (attached to the AT&T-Bell South Merger News release), *available at* http://hraunfoss.fcc.gov/edocs_public/attachment/DOC-269275A1.pdf.

82. *See* Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, *Policy Statement*, 20 FCC Rcd. 14,986 (2005). For background on the concept of network neutrality, see Marvin Ammori, *Beyond Content Neutrality: Understanding Content-Based Promotion of Democratic Speech*, 61 FED. COMM. L. J. 273 (March 2009); Rob Frieden, *Internet 3.0: Identifying Problems and Solutions to the Network Neutrality Debate*, 1 INT'L J. OF COMM., 461 (2007), *available at* http://ijoc.org/ojs/index.php/ijoc/article/view/160/86; Rob Frieden, *Network Neutrality or Bias?—Handicapping the Odds for a Tiered and Branded Internet*, 29 HASTINGS COMM. & ENT. L. J., 171 (Winter 2007); Barbara van Schewick, *Towards an Economic Framework for Network Neutrality Regulation*, 5 J. ON TELECOMM. & HIGH TECH. L. 329 (2007); Amit M. Schejter & Moran Yemini, *"Justice, and Only Justice, You Shall Pursue": Network Neutrality, the First Amendment and John Rawls's Theory of Justice*, 14 MICH. TELECOMM. & TECH. L. REV. 137 (Fall 2007); Tim Wu & Christopher S. Yoo, *Keeping the Internet Neutral? Tim Wu and Christopher Yoo Debate*, 59 FED. COMM. L.J. 575 (June 2007).

83. The FCC has experienced several judicial reversals of the Commission's attempt to relax broadcast and MVPD ownership rules. In *Fox Television Stations, Inc. v. FCC*, 280 F.3d 1027 (D.C. Cir. 2002), *modified on reh'g*, 293 F.3d 537 (D.C. Cir. 2002), the D.C. Circuit remanded the FCC's

Prometheus Radio Project v. FCC held that the FCC's decision to replace its newspaper/broadcast cross-ownership rules with cross-media limits did not violate the Constitution or Communications Act of 1934, as amended, but that the Commission did not sufficiently justify its particular chosen numerical limits for cross-ownership of media within local markets.[84] While the court affirmed the FCC's decision to retain the local television ownership rule restricting combinations of four largest stations in any market, it held that the Commission's modification to allow triopolies in markets of 18 stations or more and duopolies in other markets was unsupported by the evidence. The court also rejected the methodology used by the FCC to assess the degree of competition in broadcast markets and to justify the retention of numerical ownership restrictions.[85] "Yet no matter what the Commission decides to do to any particular rule—retain, repeal, or modify (whether to make more or less stringent)—it must do so in the public interest and support its decision with a reasoned analysis."[86]

E.   Cable Television Ownership Restrictions

FCC regulation of cable television operators' maximum permissible horizontal and vertical ownership provides a case study showing how the Commission, over time, can fail to justify its rationale for both deregulating and also maintaining regulations. As directed by Congress in the Cable Television Consumer Protection and Competition Act of 1992,[87] the FCC established a 30 percent horizontal ownership limit on the number of cable subscribers served by a single company and a 40 percent vertical limitation on the number of channels for which a single company has an attributable ownership interest.[88] In 1999, the

---

retention of the then congressionally-established 35 percent national television ownership rule. *See* 1998 Biennial Review—Review of the Comm'ns Broadcast Ownership Rules & Other Rules Adopted Pursuant to Section 202 of the Telecomms. Act of 1996, *Biennial Review Report*, 15 FCC Rcd. 11,058 (2000). In *Sinclair Broadcasting Group, Inc. v. FCC*, 284 F.3d 148 (D.C. Cir. 2002), the court remanded the Commission's 1999 revision of its local television multiple ownership rule. *See* Review of the Comm's Regulations Governing Television Broad., 14 FCC Rcd. 12,903 (1999). *See also*, Prometheus Radio Project v. FCC, 373 F.3d 372, 382 (3d Cir. 2004), *cert. denied*, 545 U.S. 1123 (2004).

84.   *Prometheus*, 373 F.3d at 382.

85.   *Id*. ("Most importantly, the Commission has not sufficiently justified its particular chosen numerical limits for local television ownership, local radio ownership, and cross-ownership of media within local markets. Accordingly, we partially remand the Order for the Commission's additional justification or modification . . . .").

86.   *Id*. at 395.

87.   Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385, 106 Stat. 1460 (1992) (codified as amended in scattered sections of chapter five, subchapter V-A of 47 U.S.C.).

88.   Implementation of Sections 12 & 19 of the Cable Television Consumer Protection & Competition Act of 1992, 8 FCC Rcd. 8565 (1993), *aff'd in part, rev'd in part sub nom*. Time

Commission revised the 30 percent horizontal limit to permit a cable operator to reach 30 percent of all Multichannel Video Programming Distributor (MVPD) subscribers, rather than solely cable subscribers thereby increasing the cable subscriber limit to 36.7 percent.[89] The D.C. Circuit Court of Appeals held that the horizontal and vertical ownership limits unduly burdened cable operators' First Amendment rights and that the Commission's evidentiary basis for imposing the ownership limits and its rationales supporting the vacated attribution rules did not meet the applicable standards of review.[90] Additionally the court determined that the Commission had failed to consider sufficiently changes that have occurred in the MVPD market since passage of the 1992 Cable Act. Even as the FCC, on remand, sought comment on the nature of the MVPD industry, the Commission had no problem approving several blockbuster mergers, including Comcast's acquisition of the cable television ownership interests of AT&T[91] and News Corporation's acquisition of the direct broadcast satellite and other media business of Hughes Electronics Corporation.[92]

The D.C. Circuit Court of Appeals stated that the FCC failed to build a credible evidentiary record on which to establish relaxed ownership rules:

> [T]he statute allows the Commission to act prophylactically against the risk of 'unfair' conduct by cable operators that might unduly impede the flow of programming, either by the 'joint' actions of two or more companies or the independent action of a single company of sufficient size. But the Commission has pointed to nothing in the record supporting a non-conjectural risk of anticompetitive behavior, either by collusion or other means. Accordingly, we reverse and remand with respect to the 30 percent rule. [93]

Acting six years after the remand in *Time Warner Entertainment Co.*,

---

Warner Entm't Co., v. FCC, 240 F.3d 1126 (D.C.Cir. 2001), *cert. denied* Consumer Fed'n of Am. v. FCC, 534 U.S. 1054 (2001). The D.C. Circuit upheld the underlying statute in *Time Warner Entertainment Co. v. United States*, 211 F.3d 1313 (D.C. Cir. 2000).

89. Implementation of Section 11(c) of the Cable Television Consumer Protection & Competition Act of 1992, Horizontal Ownership Limits, MM Docket No. 92-264, *Third Report & Order*, 14 FCC Rcd. 19,098 (1999).

90. *Time Warner Entm't Co.*, 240 F.3d at 1126.

91. *See* Applications for Consent to the Transfer of Control of Licenses, Comcast Corporation & AT&T Corp., Transferors, to AT&T Comcast Corporation, Transferee *Memorandum Opinion & Order*, 17 FCCR 23, 246 (2002).

92. *See* General Motors Corporation & Hughes Electronics Corporation, Transferors & The News Corporation Limited, Transferee, For Authority to Transfer Control, *Memorandum Opinion & Order*, 19 FCC Rcd. 473 (2003). The programming assets involved in the transaction included 35 owned and operated (O&O) full-power television broadcast stations, a national television broadcast network, ten national cable programming networks, and 22 regional cable programming networks.

93. *Time Warner Entm't Co.*, 240 F.3d at 1136.

the FCC again proposed a cap on attributable ownership interest in cable systems serving more than 30 percent of multichannel video programming subscribers nationwide as it had initially done in 1993.[94] The Commission reiterated the need to cap ownership interest so that no single cable operator or group of operators could leverage size and market power to impede unfairly the flow of programming to consumers as mandated by Section 613(f) of the 1992 Cable Act.[95]

The Commission sought to remedy the defects in its previous order that had triggered a reversal on grounds that the Commission lacked evidence that cable operators would collude based on an assumption that cable operators would coordinate their behavior in an anticompetitive manner. The Commission had justified a 30 percent cap on the assumption that the video marketplace could function well if 40 percent of the market constituted an "open field" with 60 percent captured by the two largest multiple system operators. Additionally the FCC responded to the court's admonition that the Commission had to consider both market share and the nature and type of competition when establishing a percentage cap on attributable ownership interest.

Prior to issuing its Fourth Report & Order and Further Notice of Proposed Rulemaking, the Commission sought to shore up the record with an analysis of bargaining theory and monopsony (single buyer) behavior. The empirical and survey data identified "the contractual relationships between programmers and cable operators in order to establish the extent of cable operators' market power and the effects of market power on the quantity and quality of programming, as well as the effects of market power on the programming costs of smaller MVPDs."[96]

The FCC concluded that a modified "open field" analysis remains the best way to determine the need for an ownership cap:

> After careful consideration of the evidence before us, including the language and intent of the statute and our understanding of the

---

94. The Comm'n's Cable Horizontal & Vertical Ownership Limits, *Fourth Report & Order & Further Notice of Proposed Rulemaking*, 23 FCC Rcd. 2134 (2008) [hereinafter *Fourth Cable Horizontal & Vertical Ownership Cap Order*]. *See also* Implementation of Sections 11 & 13 of the Cable Television Consumer Protection & Competition Act of 1992, Horizontal & Vertical Ownership Limits, *Second Report & Order*, 8 FCC Rcd. 8565 (1993); Implementation of Section 11(c) of the Cable Television Consumer Protection & Competition Act of 1992; Horizontal Ownership Limits, *Third Report &* Order, 14 FCC Rcd. 19,098 (1999) (revising the 30 percent horizontal limit to permit a cable operator to serve 30 percent of all MVPD subscribers rather than 30 percent of all cable homes passed in light of changed marketplace conditions).

95. Section 613(f) of the Act, added by the 1992 Cable Act, codified at 47 U.S.C. § 533(f)(2)(A), directs the FCC to conduct proceedings to establish reasonable limits on the number of subscribers a cable operator may serve ("horizontal limit") and the number of channels a cable operator may devote to its affiliated programming networks ("vertical," or "channel occupancy" limit).

96. *Fourth Cable Horizontal & Vertical Ownership Cap Order*, 23 FCC Rcd. at 2140.

programming market, we determine that use of the open field approach to set a horizontal limit is the most appropriate means of ensuring that the flow of programming to consumers is not unfairly impeded. The modified open field method that we adopt in this *Order* yields a horizontal ownership cap that ensures that no cable provider is so large that it can prevent a programmer from serving "the number of viewers needed for viability—independent of concerns over anticompetitive conduct."[97]

The Commission concluded that even one powerful MSO could have sufficient market power to thwart the successful debut of a new programming network:

> Most importantly, we do not believe that a single new programming network, having failed to gain carriage on the largest cable operator's system, would have a good chance of both gaining carriage on other MVPDs and then induce enough of the large cable operator's subscribers to switch to the other MVPDs either to allow the network to gain sufficient subscribership to be financially viable, or to place substantial pressure on the large cable operator to carry the network within a reasonable period of time.[98]

The Commission noted that "without an open field that is large enough, many new programming networks might not even attempt to enter the market without a contract from the largest cable operator."[99]

In August, 2009, the D.C. Circuit Court of Appeals again rejected the FCC's decision to cap the national market penetration of a single cable operator at 30 percent.[100] In what it considered an egregious disregard of changed circumstances, such as the onset of substantial competition from DBS operators and fiber optic video providers, the court vacated the rule, rather than remanding to the FCC with a requirement that it reconsider the rationale and evidentiary support for the rule.

The court determined that the FCC did not have evidentiary support for the Commission's assumption that the two largest, vertically integrated cable operators, each having up to 30 percent national market share, would collude and both refuse to carry programming from new programmers. The Commission's "open field" analysis assumes that for a competitive video programming marketplace to function, new programmers need to have access to the 40 percent of the market not controlled by the top two cable operators.

---

97. *Id.* at 2166 (citing *Time Warner Entm't Co.*, 240 F.3d at 1131–32).
98. *Id.* at 2168.
99. *Id.* at 2169.
100. Comcast Corp. v. FCC, 579 F.3d 1 (D.C. Cir. 2009).

The court also rejected as "feeble" the four "non-empirical" reasons that the FCC relied upon to largely ignore the competitive alternative provided by DBS: (1) high consumer costs in switching to DBS; (2) attractiveness of non-video services, such as broadband Internet access, provided by cable operators; (3) the inability of consumers to know the attractiveness of alternative video programming packages before consuming them; and (4) the inability of DBS to support new programming networks lacking financing.[101] The court noted that 50 percent of all DBS subscribers previously subscribed to cable television service, and that the Commission did not provide evidence to support the conclusion that offering non-video services confers a competitive advantage to cable operators, particularly in light of the fact that the two DBS operators have partnered with telephone companies to provide bundled services. The court also refused to agree that consumers do not know the nature of the content offered by new networks delivered via DBS.

The court noted the significant increase in the number of cable networks and the fact that the percentage of networks affiliated with, or owned by a vertically integrated cable operator has declined since 1992 when Congress enacted the Cable Television Consumer Protection and Competition Act that authorized FCC-prescribed market penetration caps.[102] The court concluded:

> [T]he Commission has failed to demonstrate that allowing a cable operator to serve more than 30 percent of all cable subscribers would threaten to reduce either competition or diversity in programming. First, the record is replete with evidence of ever increasing competition among video providers: Satellite and fiber optic video providers have entered the market and grown in market share since the Congress passed the 1992 Act, and particularly in recent years. Cable operators, therefore, no longer have the bottleneck power over programming that concerned the Congress in 1992. Second, over the same period there has been a dramatic increase both in the number of cable networks and in the programming available to subscribers.[103]

### F.	Abandoned Wireless Carrier Spectrum Cap

In 2003, the FCC eliminated a cap on the amount of spectrum a

---

101.	*See id.* at 6–7.

102.	47 U.S.C. § 533(f)(1)–(f)(2)(A) ("The Cable Television Consumer Protection and Competition Act of 1992 directed the FCC, '[i]n order to enhance effective competition,' to prescrib[e] rules and regulations . . . [to] ensure that no cable operator or group of cable operators can unfairly impede, either because of the size of any individual operator or because of joint actions by a group of operators of sufficient size, the flow of video programming from the video programmer to the consumer.").

103.	*Comcast Corp.*, 579 F.3d at 7.

single wireless telecommunications carrier can control, based on a current determination of ample competition:

> Measures of market concentration in the record show a substantial continuing decline in concentration in most local [commercial mobile radio service] CMRS markets. We find that considerable entry has occurred and that meaningful competition is present, particularly given the presence of such earmarks of competition as falling prices, increasing output, and improving service quality and options. Specifically, concentration in CMRS markets, as measured by subscriber share, is falling.[104]

Since the Commission's decision, the market has become even more concentrated with the top four carriers controlling over 87 percent of the market.[105] Notwithstanding such concentration and clear evidence that the carriers rarely change their rates or differ in what they charge retail customers, the Commission regularly claims that the wireless marketplace remains robustly competitive.[106]

In only one case did the FCC even seek to ensure that incumbent carriers comply with common carrier responsibilities to operate open networks, as opposed to the general practice of offering limited, "walled-garden" access to carrier- or handset manufacturer-selected content.

The FCC established an "Open Platform" requirement for a 22 MHz block of choice "beachfront" 700 MHz spectrum made available for auction in the conversion from analog to digital broadcast television. The winning bidder must allow consumers to use the handset of their choice and download and use any applications, subject to certain reasonable network management conditions that allow the licensee to

---

104. 2000 Biennial Regulatory Review Spectrum Aggregation Limits for Commercial Mobile Radio Services, *Report & Order*, 16 FCC Rcd. 22,668, 22,682 (2001). The FCC rejected as a significant barrier to market entry the need to acquire spectrum, in light of the Commission's view that resale opportunities would suffice. *Id.* at 22,690 ("Nonetheless, there are factors that moderate concern regarding the spectrum access barrier to entry. In particular, the need for direct access to spectrum is not absolute because carriers can compete in the provision of CMRS without direct access to spectrum through resale, or a mobile virtual network operator ('MVNO') arrangement.")

105. Using statistics compiled by a wireless trade association, the FCC reports that there were 255,395,599 cellular radio subscribers in the U.S. *Thirteenth CMRS Report, supra* note 39, at 6314 app. A, tbl.A-1, *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-09-54A1.pdf. The top four carriers serve approximate 223,173,000 subscribers, amounting to approximately 87.4 percent. *Id.* at 6321 app. A, tbl.A-4. The FCC calculated the top four carrier market share at approximately 85 percent. *Id.* at 6200, chart 1.

106. Implementation of Section 6002(B) of the Omnibus Budget Reconciliation Act of 1993, Annual Report & Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, *Twelfth Report*, 23 FCC Rcd. 2241, 2354 (2008) ("Using the various data sources and metrics discussed above, we have met our statutory requirement to analyze the competitive market conditions with respect to commercial mobile services, and conclude that the CMRS marketplace is effectively competitive.").

protect the network from harm:

> Although we generally prefer to rely on marketplace forces as the most efficient mechanism for fostering competition, we conclude that the 700 MHz spectrum provides an important opportunity to apply requirements for open platforms for devices and applications for the benefit of consumers, without unduly burdening existing services and markets. For the reasons described below, we determine that for one commercial spectrum block in the 700 MHz Band—the Upper 700 MHz Band C Block—we will require licensees to allow customers, device manufacturers, third-party application developers, and others to use or develop the devices and applications of their choice, subject to certain conditions . . . .[107]

The unfettered ability of incumbent carriers to acquire additional spectrum forecloses market entry by additional carriers, an outcome about which the FCC apparently has no concern. In the 700 MHz spectrum auction AT&T and Verizon spent $16 billion of the $19.6 billion collected by the U.S. government.[108]

IV.   APPELLATE COURTS OFTEN DO NOT QUESTION THE FCC'S LACK OF EMPIRICISM AND PEER REVIEW

Appellate courts significantly vary in the degree to which they require the FCC to demonstrate that it has collected empirical data and analyzed it in a transparent and professional manner. One cannot easily square the following judicial statements. On one hand, a court has declared that it has "not hesitated to vacate a rule when the . . . [FCC] has not responded to empirical data or to an argument inconsistent with its conclusion.[109] On the other hand, a court readily defers to the FCC's

---

107. Service Rules for the 698-746, 747-762 & 777-792 MHz Bands, *Second Report & Order*, 22 FCC Rcd. 15,289, 15,361 (2007), *on recon.*, 22 FCC Rcd. 17,935, *partially modified*, 23 FCC Rcd. 5319 (2008), 24 FCC Rcd. 4782 (2009). Wireless carriers remain subject to conventional common carrier regulation of their telecommunications services, a status the FCC has generally ignored except for the matter of compulsory interconnection to provide subscribers with access to other carriers when "roaming" outside their home territory. *See* Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers, *Report & Order & Further Notice of Proposed Rulemaking*, 22 FCC Rcd. 15,817 (2007) (specifying that cellular operators must provide their subscribers automatic access to other carriers for making and receiving telephone calls when traveling outside the subscribers' home service regions).

108. W. David Gardner, *Verizon, AT&T Big Winners in 700 MHz Auction*, INFO. WK., Mar. 20, 2008, http://www.informationweek.com/news/mobility/showArticle.jhtml?articleID=206905000 ("According to an analysis by The Associated Press, the two telecom companies bid more than $16 billion, constituting the vast majority of the overall $19.6 billion that was bid in the FCC auction. With Verizon Wireless and AT&T dominating the auction so completely, hopes that the auction would allow for the creation of a new nationwide wireless service provider were dashed."); *see also*, Saul Hansell, *Verizon and AT&T Win Big in Auction of Spectrum*, N.Y. TIMES (March 21, 2008), *available at* http://www.nytimes.com/2008/03/21/technology/21auction.html; FCC, Auction 73, 700 MHz Band Fact Sheet, http://wireless.fcc.gov/auctions/default.htm?job=auction_factsheet&id=73.

109. Comcast Corp. v. FCC, 579 F.3d 1, 8 (D.C. Cir. 2009) (citing Ill. Pub. Telecomms. Ass'n v. FCC, 117 F.3d 555, 564 (D.C. Cir. 1997)) (rejecting the FCC's determination that local and toll

expertise and judgment noting the Commission should have "necessarily wide latitude to make policy based on predictive judgments deriving from its general expertise."[110]

The Supreme Court appears to support significant deference to the FCC's expertise.

In circumstances where one cannot predict with certainty the outcome of a decision, *e.g.*, to allow common ownership of broadcast stations by a newspaper operator in the same locality or to require divestiture, the Court typically will defer to the FCC's judgment:

> In such circumstances complete factual support in the record for the Commission's judgment or prediction is not possible or required; "a forecast of the direction in which future public interest lies necessarily involves deductions based on the expert knowledge of the agency."[111]

In *National Cable & Telecommunications Association v. Brand X Internet Services*,[112] a majority of the Supreme Court endorsed the FCC's information service classification for cable modem service used to provide broadband Internet access. Using the *Chevron* standard,[113] which supports deferral to administrative agency decision making that reasonably interprets and implements ambiguous statutory language,[114] the Court cleared the way for the FCC to create a lightly regulated information service "safe harbor" for all wireline and wireless broadband access services.

A majority of the Court agreed that the FCC could reasonably have concluded that cable modems solely provide an information service, despite the use of telecommunications to link subscribers with content. Accordingly, the Court reversed the Ninth Circuit Court of Appeals'

---

free calls from pay telephone have similar costs, because the record compiled by the FCC showed significantly different costs). *Ill. Pub. Telecomms. Ass'n*, 117 F.3d at 564 (citing Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Automobile Ins. Co., 463 U.S. 29, 46–57 (1983)) ("The FCC's *ipse dixit* conclusion, coupled with its failure to respond to contrary arguments resting on solid data, epitomizes arbitrary and capricious decisionmaking.").

110. Am. Family Ass'n, Inc. v. FCC, 365 F.3d 1156, 1166 (D.C. Cir. 2004). "We must defer to the Commission's expert judgment in the absence of record evidence indicating that the Commission's assumption is a clear error of judgment, or a showing that the empirical assumption is facially implausible or inconsistent." *Id.* at 1165 (FCC's method for assigning noncommercial educational broadcast licenses among competing applicants deemed valid).

111. FCC v. Nat'l Citizens Comm. for Broad., 436 U.S. 775, 814 (1978) (quoting FPC v. Transcon. Gas Pipe Line Corp., 365 U.S. 1, 29 (1961); Indus. Union Dept., AFL-CIO v. Hodgson, 499 F.2d 467, 474–475 (D.C. Cir. 1974)).

112. Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs., 545 U.S. 967 (2005).

113. Chevron, U.S.A., Inc. v. Nat'l Res. Def. Council, Inc., 467 U.S. 837 (1984).

114. *Brand X Internet Servs.*, 545 U.S. at 980 (citing *Chevron*, 467 U.S. at 843–844 & n.11) ("If a statute is ambiguous, and if the implementing agency's construction is reasonable, *Chevron* requires a federal court to accept the agency's construction of the statute, even if the agency's reading differs from what the court believes is the best statutory interpretation.").

prior determination that a separate and identifiable telecommunications service element existed on grounds that the *Chevron* precedent supports the FCC statutory construction:

> A court's prior judicial construction of a statute trumps an agency construction otherwise entitled to *Chevron* deference only if the prior court decision holds that its construction follows from unambiguous terms of the statue and thus leaves no room for agency discretion.[115]

The Court concluded that the Communications Act, as amended by the Telecommunications Act of 1996, contained ambiguities as to whether cable companies offered telecommunications service in conjunction with their cable modem service.

The majority used several analogies to support the view that the FCC lawfully could ignore or subordinate the telecommunications function. The majority's analogies provided examples where a venture offers a number of services, many of which combine to form a consolidated offering, and others that are made available, but are not essential. In the former, the majority noted that car dealers sell cars and not a collection of integrated components, such as steel frames and carpeting. In the latter analogies, the majority noted that a pet store might offer dog leashes in addition to puppies. Because ambiguity exists as to the functional integration or separateness of telecommunications, the Court majority gladly deferred to the FCC. The nature and scope of integration between telecommunications and information processing "turns not on the language of the [Communications] Act, but on the factual particulars of how Internet technology works and how it is provided, questions *Chevron* leaves to the Commission to resolve in the first instance."[116] While engaging in the use of "warring analogies,"[117] the majority would prefer the FCC use its technical expertise to determine congressional intent.

In a dissenting opinion, Justice Scalia did not agree that the FCC could lawfully and practically treat the telecommunications link as not separable from the predominate information processing services provided. He disputed the FCC's view that cable television companies do not provide a telecommunications service when linking subscribers physically apart from the content they access.[118] Justice Scalia used pizzerias and pizza delivery for his primary analogy and asserted that one

---

115. *Id.* at 982.
116. *Id.* at 991.
117. *Id.* at 992.
118. *Id.* at 1005 (Scalia, J., dissenting) ("The important fact, however, is that the Commission has chosen to achieve this [result] through an implausible reading of the statue, and thus exceeded the authority given it by Congress.").

could not ignore the fact that pizza baking and pizza delivery constitute two separate elements of the pizza business:

> It is therefore inevitable that customers will regard the competing cable-modem service as giving them *both* computing functionality *and* the physical pipe by which that functionality comes to their computer—both the pizza and the delivery service . . . .[119]

The use of simplistic but competing analogies within Supreme Court opinions demonstrates how experts in the law struggle to conceptualize converging telecommunications and information processing technologies. The Court's decision has provided the legal foundation for the FCC to reclassify as an information service telephone company provision of Internet access via Digital Subscriber Lines despite having previously identified a discrete and stand alone telecommunications service component. Apparently the desire to achieve deregulatory parity trumps the need for consistency in interpretation of terms created by the Telecommunications Act of 1996.[120] Justice Scalia chided the majority for its undiscerning acceptance of an FCC bureaucratic sleight of hand that changes the facts to achieve an outcome not contemplated by law.

In a case involving the potential harmful effects of "fleeting expletives" on children, the Court expressed tolerance for the FCC's need to make policies and rules despite the lack of, and possible inability to generate empirical data to support the Commission's decision:

> There are some propositions for which scant empirical evidence can be marshaled, and the harmful effect of broadcast profanity on children is one of them. One cannot demand a multiyear controlled study, in which some children are intentionally exposed to indecent broadcasts (and insulated from all other indecency), and others are shielded from all indecency. It is one thing to set aside agency action under the Administrative Procedure Act because of failure to adduce empirical data that can readily be obtained . . . . It is something else to insist upon obtaining the unobtainable. Here it suffices to know that children mimic the behavior they observe-or at least the behavior that is presented to them as normal and appropriate. Programming replete with one-word indecent expletives will tend to produce children who use (at least) one-word indecent expletives. Congress has made the determination that indecent material is harmful to children, and has left enforcement of the ban to the Commission. If enforcement had to be supported by empirical data, the ban would

---

119. *Id.* at 1009.

120. *See* Rob Frieden, *The FCC's Name Game: How Shifting Regulatory Classifications Affect Competition*, 19 BERKELEY TECH. L.J. 1275 (Fall 2004).

effectively be a nullity.[121]

Absent clear evidence that the FCC has deliberately suppressed, dismissed, or otherwise ignored data that conflicts with its policy decision, courts appear willing to rely on the Commission's predictive judgments even if they are based on assumptions rather than empirical data. Accordingly, the FCC has to act in obvious disregard for the available evidence as it did, for example, in a matter assessing the ability of broadband service providers using the electric power grid, to operate without causing harmful interference to licensed users of radio spectrum. In *American Radio Relay League, Inc. v. FCC*,[122] the D.C. Circuit Court of Appeals determined that the FCC did not comply with the Administrative Procedure Act when it redacted studies on which it relied in promulgating rules and when the Commission failed to provide a reasoned explanation for its choice of an extrapolation factor for predicting how quickly broadband over powerline (BPL) emissions attenuate or weaken.

While affirming some of the FCC's rules, the court agreed that the Commission did not provide a reasonable opportunity for public comment on unredacted staff technical studies on which it relied in establishing binding rules. The court ordered the FCC to make the studies part of the rulemaking record, while also providing a reasoned explanation on its choice of an extrapolation factor. [123] The court rejected the FCC's rationale for not disclosing in its entirety technical studies that formed the basis for its technical rules:

> The Commission has chosen to rely on the data in those studies and to place the redacted studies in the rulemaking record. Individual pages relied upon by the Commission reveal that the unredacted portions are likely to contain evidence that could call into question the Commission's decision to promulgate the rule. Under the circumstances, the Commission can point to no authority allowing it to rely on the studies in a rulemaking but hide from the public parts of the studies that may contain contrary evidence, inconvenient qualifications, or relevant explanations of the methodology employed. The Commission has not suggested that any other confidentiality considerations would be implicated were the unredacted studies made public for notice and comment.[124]

Similarly the FCC may lose judicial support when the Commission

---

121. FCC v. Fox Television Stations, Inc., 129 S. Ct. 1800, 1813 (2009).
122. Am. Radio Relay League, Inc. v. FCC, 524 F.3d 227, 231 (2008).
123. *Id*. at 242.
124. *Id*. at 239.

refuses to act in a manner supported by evidence submitted by interested parties and instead bases its decision on countervailing evidence for which it has made no explicit empirical findings. In *Qwest Corp. v. FCC*,[125] the Tenth Circuit remanded to the FCC a decision to offer universal service subsidies to telephone companies servicing rural or urban areas using a single benchmark for identifying areas where costs of service exceeded a national average by at least 135 percent. Because various parties in the proceeding submitted information showing differences in rural and urban costs, which the FCC appeared not to consider, the court concluded that the "FCC has not provided an adequate basis for us to review the rationality of [its benchmarking decision]. It has not explained or supported its decisions adequately and therefore has acted arbitrarily and not in accordance with [applicable law.]"[126]

V. CONCLUSIONS AND RECOMMENDATIONS

The FCC frequently perceives congressional and public relations benefits in forecasting the best case scenario outcome of a deregulatory decision or merger approval. Congressional oversight hearings, including ones determining the Commission's budget, have a friendlier tone when FCC representatives have positive news and statistics to report. When the Commission has to acknowledge market domination, market failure, or the lack of competition, it risks losing such a positive reception, even if regulation or merger disapproval would serve the public interest.

Imposing regulation, slowing down the speed of deregulation, and taking steps to remedy market failure typically anger stakeholders, particularly incumbent firms with the resources to act on their frustration. With millions of dollars available to support deregulatory advocacy, incumbent firms have the financial wherewithal to frame the debate so that the best case scenario appears real, not just plausible. FCC managers pragmatically realize that deviating from this party line risks congressional and major stakeholder displeasure.

Consider the consequences if the FCC reimposed a wireless carrier spectrum cap as proposed by rural carriers and other parties.[127] Doing so would constitute an acknowledgement that the wireless marketplace has become too concentrated and in turn less competitive. Absent a set-aside of spectrum for market entrants, or a cap on the amount incumbent carriers can control, any additional spectrum largely will flow to

125. Qwest Corp. v. FCC, 258 F.3d 1191 (10th Cir. 2001).
126. *Id*. at 1205.
127. Wireless Telecomms. Bureau Seeks Comment on Petition for Rulemaking of Rural Telecomms. Group, Inc. to Impose a Spectrum Aggregation Limit on all Commercial Terrestrial Wireless Spectrum Below 2.3 GHz, *Public Notice*, 23 FCC Rcd. 14,875 (2008).

incumbents. The auction of freed-up UHF television spectrum corroborates this assertion. Incumbent carriers acquired most of the newly available spectrum ostensibly to meet growing demand.[128] But an equally plausible argument casts incumbent carriers as motivated primarily to erect higher market entry barriers and to "warehouse" spectrum, *i.e.*, to control it and keep it away from market entrants who would reduce incumbents' shared domination of the marketplace and generate more facilities-based competition. Additionally, the Commission can deliver more funds to the treasury when it auctions off spectrum free of any encumbrance, such as a duty to provide common carrier access, or limitation, such as allowing bidding only by non-incumbents.

Attributing greater competitiveness to the telecommunications marketplace will continue unless and until the FCC perceives greater internal benefits from serving as a fair-minded fact finder. The Commission will change its approach only through prodding. Such nudging can take place if appellate courts defer less and second guess more, if congressional oversight committees challenge the FCC's assumptions and statistics, and if the FCC, voluntarily or otherwise, subjects its work product to peer review.

With the change of administration, new FCC managers have proposed to operate in a more transparent and accessible manner. For example, the Commission has enlisted the support of major university-affiliated research programs to determine how best to promote ubiquitous access to broadband networks at affordable rates.[129] Additionally the Commission has scheduled numerous workshops to address various aspects of infrastructure development and access.[130]

The FCC's recommitment to transparency and service in the public interest will require external pressure to achieve thorough compliance. The Commission will need to encourage public participation, rather than rely on the filings of stakeholders. Such receptiveness will require more than the occasional road trip out from Washington, D.C. to hear from a few people for the last hour of a pre-arranged and pre-packaged hearing. Additionally, the Commission will need to reshape its internal culture to

---

128. For example, Verizon Wireless bid $9,363,160,000 of the net bidding total amounting to $18,957,582,150. AT&T bid $6,636,658,000. *See* FCC, Auction 73, 700 MHz Band Fact Sheet, http://wireless.fcc.gov/auctions/default.htm?job=auction_summary&id=73.

129. *See, e.g.,* FCC, Harvard's Berkman Center to Conduct Independent Review of Broadband Studies to Assist FCC (2009), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-291986A1.pdf; Columbia Inst. for Tele-Info. to Conduct Indep. Review of Telecom Capital Expenditures to Assist FCC (2009), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-292598A1.pdf.

130. *See* FCC, Broadband.gov, http://www.broadband.gov/ (last visited December 21, 2009).

encourage staff to engage in debate rather than to restate the conventional wisdom, or the party line articulated from the top down, *i.e.*, from Commissioners and the Chairman. Because one can hardly mandate an open mind, a commitment toward openness and getting the facts right must develop internally, as a public interest commitment of staff, or externally through embarrassing court reversals and congressional hearings.

WHY THE IPHONE WON'T LAST FOREVER AND WHAT THE GOVERNMENT SHOULD DO TO PROMOTE ITS SUCCESSOR

ROBERT HAHN* AND HAL J. SINGER**

313

INTRODUCTION

In the summer of 2009, the Senate Commerce Committee held a hearing to explore the competitive effects of exclusive handset agreements in the wireless industry. Exclusive agreements typically allow one particular wireless operator to serve as the sole distributor of a manufacturer's handset for a given period of time. The new chairman of the Federal Communications Commission (FCC) has announced his intention to explore the issue of handset exclusivity.[1] There are several pending petitions before the FCC that raise this issue, one of which seeks to ban exclusive handset contracts.[2]

A key element that appears to be missing from the policy debate is whether exclusive contracts harm consumers. Antitrust scholars recognize that exclusive contracts have the potential under certain conditions to reduce consumer welfare. One condition concerns market power: one of the firms seeking an exclusive agreement must dominate access to consumers. A second condition is that the excluded product is needed by the dominant firm's rivals to constrain the prices the dominant firm can charge consumers. Economists sometimes refer to such a product as a "must-have" input. This article evaluates both conditions as applied to the U.S. mobile handset market. In Part II of this paper, we analyze whether Apple or any other manufacturer has established a dominant share in the mobile handset market. Market shares for smartphone sales in the United States reveal that, in the first quarter of 2009, RIM's BlackBerry Curve moved past Apple's iPhone to become the best-selling consumer smartphone of the quarter in the United States[3]—a result that is not consistent with the notion of dominance. We also review the rapid pace of innovation in handsets, which resulted in

---

1. John Poirier, *FCC chair eyeing handsets, media*, REUTERS, July 30, 2009, *available at* http://www.reuters.com/article/idUSTRE56U0HI20090731.

2. Rural Cellular Association, Petition For Rulemaking Regarding Exclusivity Arrangements Between Commercial Wireless Carriers and Handset Manufacturers, RM-11497 (May 20, 2008), *available at* http://fjallfoss.fcc.gov/ecfs/document/ view?id=6520010759 [hereinafter Rural Cellular Association Petition]; Reply Comments of the Ad Hoc Public Interest Spectrum Coalition, to the Petition For Rulemaking Regarding Exclusivity Arrangements Between Commercial Wireless Carriers and Handset Manufacturers, RM-11497, *available at* http://fjallfoss.fcc.gov/ecfs/document/ view?id=6520196717.

3. Press Release, The NPD Group, Inc., RIM Unseats Apple in the NPD Group's Latest Smartphone Ranking (May 4, 2009), http://www.npd.com/press/releases/ press_090504.html.

shifting market shares among handset makers. While exclusivity was not always the norm, we show that many of the iconic handsets introduced since 2004 have been introduced pursuant to an exclusive contract. Next, we analyze whether the iPhone is a "must-have" input for wireless carriers, and show that it is not.

Antitrust scholars also recognize that exclusive agreements can promote consumer welfare by encouraging risk-taking by entrepreneurs and by aligning the incentives of dealers and manufacturers. For example, the economics literature recognizes that exclusive contracts can address dealer-incentive issues that arise when the manufacturer wants the dealer to invest in specific facilities or human capital to provide better service to consumers.[4] In the absence of such agreements, dealers may not invest in an efficient level of promotion. Because exclusive contracts have the potential to increase or decrease welfare, they are analyzed under a "rule of reason" framework, which balances the benefits and costs of permitting such contracts. In Part III of this paper, we explain that exclusive handset contracts are likely motivated for three procompetitive reasons: (1) to share the enormous risk associated with launching a new device, (2) to align the incentives of the carrier with the handset maker, and (3) to ensure network quality. From the perspective of a handset maker like Apple, aligning with a single carrier like AT&T ensures that Apple does not incur all of the downside risk in the event that the phone is not a success. The agreement also ensures that AT&T will make iPhone-specific investments such as marketing support, handset subsidies, and modifying its network to accommodate bandwidth-intensive applications.

New technologies often seemingly emerge from nowhere, but also frequently lose their luster quickly. Consider the fleeting success of Second Life, the virtual online world that was supposed to induce Americans to live online. Analysts predicted that Second Life could top the World Wide Web as *the* way to tap the Internet's resources.[5] Some even thought it could challenge the Microsoft Windows operating system.[6] The hype induced corporate giants like Nike and IBM to develop a presence in this virtual world.[7] Reuters stationed a reporter at its first virtual news bureau inside Second Life.[8] IBM sank $10 million

---

4. A. Douglas Melamed, *Exclusive Dealing Agreements and Other Exclusionary Conduct: Are There Unifying Principles?*, 73 ANTITRUST L.J. 375, 377–78 (2006).

5. Robert D. Hof, *My Virtual Life*, BUS. WK., May 1, 2006, at 72, *available at* http://www.businessweek.com/magazine/content/06_18/b3982001.htm.

6. *Id.*

7. David Kirkpatrick, *Second Life: It's Not a Game*, FORTUNE, Jan. 23, 2007, http://money.cnn.com/2007/01/22/magazines/fortune/whatsnext_secondlife.fortune/index.htm.

8. Andrew Adam Newman, *The Reporter Is Real, but the World He Covers Isn't*, N.Y.

on initiatives to further develop Second Life and the online three-dimensional world generally.[9] Despite this hype, Second Life became part of a "hat trick that didn't happen," and the frenzy surrounding the online game fizzled.[10] As of July 2009, the site was populated by less than 90,000 users at a time.[11] Second Life's history illustrates the short shelf life of some technologies that had high expectations.

MySpace provides another example of the transient nature of a so-called dominant technology. MySpace emerged in 2003, and by 2006, had grown to 70 million users.[12] Its superior music and video capabilities helped the network edge out Friendster and other competitors to become the most popular social network.[13] Rupert Murdoch's News Corp. paid $649 million in 2005 for Intermix Media, owner of MySpace, before the company had managed to turn a significant profit.[14] Some analysts asserted that MySpace was a "natural monopoly," citing the high switching cost of moving from one social network to another as an impenetrable "network effect" giving MySpace dominance over other social networks.[15] By June 2009, Facebook, a rival social network, roughly doubled in size and became the largest network in the United States and globally while MySpace lost five percent of its users.[16]

In this article, we explain how the mobile handset market is subject to these same disruptive forces—an iconic handset emerges, is quickly crowned the "winner," and soon thereafter is replaced by another technology that was not even conceived of at the time the "winner" was launched. Many iPhone-inspired smartphones, including the Blackberry Storm and the HTC G1, could unseat the iPhone in the smartphone segment. We explain that heavy-handed regulation of such dynamic

---

TIMES, Oct. 16, 2006, at C6, *available at* http://www.nytimes.com/2006/10/16/technology/16reuters.html.

9. Kirkpatrick, *supra* note 7.

10. Richard Siklos, *The Hat Trick That Didn't Happen*, N.Y. TIMES, Dec. 10, 2006, § 3, at 3, *available at* http://www.nytimes.com/2006/12/10/business/yourmoney/10frenzy.html.

11. *Online Playgrounds: Virtual Worlds for Children*, ECONOMIST, July 25, 2009, at 62.

12. Saul Hansell, *For MySpace, Making Friends Was Easy. Big Profit Is Tougher*, N.Y. TIMES, Apr. 23, 2006, § 3, at 1, *available at* http://www.nytimes.com/2006/04/23/business/yourmoney/23myspace.html.

13. *MySpace, Facebook and Other Social Networking Sites: Hot Today, Gone Tomorrow?*, KNOWLEDGE@WHARTON, May 3, 2006, http://knowledge.wharton.upenn.edu/article.cfm?articleid=1463.

14. Hansell, *supra* note 12.

15. Victor Keegan, *Will MySpace Ever Lose Its Monopoly?*, THE GUARDIAN, Feb. 8, 2007, at 4, *available at* http://www.guardian.co.uk/technology/2007/feb/08/business.comment; John Barrett, *MySpace Is a Natural Monopoly*, TECHNEWSWORLD, Jan. 17, 2007, http://www.technewsworld.com/story/55185.html.

16. *Facebook Dethrones MySpace in the U.S.*, L.A. TIMES, June 16, 2009, *available at* http://articles.latimes.com/2009/jun/16/business/fi-facebook16. The MySpace and Second Life examples concern applications. There are also examples of fleeting dominance on the device side, such as the Sony Walkman and the VCR.

markets is likely to reduce welfare on net.[17] The cost of erring through regulatory intervention—for example, by restricting voluntary private agreements that promote risk taking—can be significant.[18] Delaying the benefits associated with innovation in mobile handsets could cost consumers dearly. In sum, exclusive contracts between handset makers and wireless carriers benefit consumers by encouraging innovation by both handset makers and wireless service providers that are vying for market share, and by enabling some handset makers to remain viable. These benefits take the form of greater variety of choices in handsets, greatly enhanced capabilities, and a more affordable range of device options. Banning exclusive contracts could have the unintended consequence of reducing innovation and raising prices.

I.   A BRIEF ECONOMIC HISTORY OF DISRUPTIVE REVOLUTIONS IN THE HANDSET MARKET

The preceding examples of products that were thought to be the "next big thing" and turned out to be passing fancies suggest that we should be careful in making predictions about the dominance of a technology, network, or even an idea.[19] A review of the history of the wireless handset market suggests that the pronouncements about the dominance of the iPhone are likely to be proven wrong.

A.   Innovative Handsets From the Last Two Decades

Marty Cooper is the engineer who is credited with converting the cellular technology used in car phones of the 1970s into portable handsets. In April 1973, Motorola hosted a press conference at the Hilton New York to introduce Cooper's prototype of a cell phone. The handset, called a DynaTAC, had 35 minutes of talk time and weighed 2.2 pounds. In 1983, Motorola introduced a "lighter" version of DynaTAC (still weighing over one pound) with a list price of $4,000.[20]

---

17. *See*, *e.g.*, Robert W. Crandall, Robert W. Hahn, Robert E. Litan, & Scott Wallsten, *Internet Telephones: Hanging Up on Regulation?* 6(3) THE MILKEN INST. REV. 30 (2004); Robert W. Hahn, *Competition Policy and the New Economy*, 3(1) THE MILKEN INST. REV. 33 (2001).

18. *See, e.g.*, Jerry A. Hausman, *Valuing the Effect of Regulation on New Services in Telecommunications*, *in* BROOKINGS PAPERS ON ECON. ACTIVITY: MICROECON. 1 (1997).

19. Consider Francis Fukuyama's now infamous conclusion that America's victory over the Soviet Union marked the "end of history" and "the end point of mankind's ideological evolution and the universalization of Western liberal democracy as the final form of human government." Francis Fukuyama, *The End of History?*, 16 THE NAT'L INT. 3 (1989). This idea has now been discredited by the proliferation of authoritarian regimes over the last two decades that stand in stark opposition to liberal principles of the United States and Western Europe.

20. *Father of the Cell Phone*, ECONOMIST, June 4, 2009.

In 1989, Motorola introduced the MicroTAC flip phone.[21] At 12 ounces, it was approximately half the size of any of its rivals and was able to fit into a shirt pocket; the phone was originally priced at $2,995 (a full 25 percent discount from the earlier model).[22] *Fortune* magazine reported that the end of innovation was near: "Portable phones won't get a lot smaller than this one. After all, they have to reach from your ear to your mouth."[23] In 1996, Motorola offered a 3.1 ounce StarTAC mobile phone, hailed as the first wearable phone.[24] One media source suggested that StarTAC was "about to revolutionize the cellular industry."[25] Another analyst (incorrectly) predicted that the StarTAC would ensure that the next generation of cell phones would be "worn on the wrist, a la Dick Tracy."[26] Still others predicted the introduction of "kid phones, with only two buttons—one for mommy and one for daddy."[27] With the benefit of hindsight, it is now clear that neither the MicroTAC nor the StarTAC marked the pinnacle of innovation in cell phones.

Although each of these phones was considered cutting-edge or "iconic" when introduced, these names have faded into obscurity with the passage of time. In this decade, brands like Treo, BlackBerry, Razr, and iPhone have all competed for dominance in the handset market. The evolution of mobile handsets from the mid-1990s through 2002 set the stage for the introduction of personal digital assistants (PDAs), thin phones, and more recently, smartphones.

Table 1 shows that exclusive contracts were not always the norm; however, many, if not all, of the iconic handsets introduced since 2004 have been introduced pursuant to an exclusive contract. Although we cannot demonstrate that exclusive agreements were the cause of the recent innovation, it is clear that exclusive contracts are associated with recent innovation.[28]

---

21. Geoffrey Rowan, *Personal Cellular Phone Unveiled by Motorola*, THE GLOBE & MAIL, Apr. 26, 1989.

22. Brian O'Reilly, *Gadgets for Executives*, FORTUNE, Sept. 11, 1989, at 200.

23. *Id.*

24*. Motorola Puts Communications in the Palm of Your Hand—Announces New StarTAC Wearable Cellular Telephone*, PR NEWSWIRE, Jan. 3, 1996, *available at* http://www.encyclopedia.com/doc/1G1-17958434.html.

25. *Id.*

26. Howard Wolinsky, *Cell Phones Keep Ringing Up Sales*, CHI. SUN-TIMES, Jan. 14, 1996, at 39.

27. *Id.* (internal quotations omitted).

28. We discuss the use of these contracts, and the reasons for believing they promote innovation in this case, in Part III.

Table 1: A History of Iconic Handsets

Company	Model	Year Introduced	Category	Innovation	Exclusive (w/ whom)
Motorola	MicroTAC	1989	NA	Flip-phone	
Motorola	StarTAC	1996	NA	Reduced size	
Nokia	9000 Communicator	1996	PDA	Combine phone, fax, email	
Handspring	Treo 180	2002	PDA	Combine personal digital assistant w/ cell phone	
Motorola	Razr V3	2004	Thin	Reduced size	AT&T
Danger	Sidekick	2002	Smartphone	Offer email and web surfing to mass market	T-Mobile
RIM	Blackberry Pearl	2006	Smartphone	Reduced size; integration of push e-mail with media	T-Mobile
RIM	Blackberry Curve	2007	Smartphone	Reduced size; integration of push e-mail with media	AT&T
Apple	iPhone	2007	Smartphone	Multi-touch screen, operate on a 3G or Wi-Fi network, visual voicemail	AT&T
Palm	Pre	2009	Smartphone	Run multiple apps at same time; combines e-mail, pictures, video, and web contacts	Sprint
HTC	G1	2009	Smartphone	Google's Android platform, already has thousands of third-party applications	T-Mobile

Personal Digital Assistants. In 1993, BellSouth and IBM jointly introduced the Simon Personal Communicator, the first mobile handset that included pager, calculator, and calendar.[29] The handset weighed 21 ounces and sold for $900.[30] The Simon was hailed for its uniqueness. One article announcing its release described it as "the first time a company had placed a computer in a cellular phone, rather than placing a cellular phone in a computer."[31]

In 1996, Nokia launched the Nokia 9000 Communicator.[32] The Nokia 9000 was hailed as "revolutionary" and as signaling "the birth of the real information age."[33] The device combined phone, fax, address book, and e-mail in a single interface.[34]

In the same year, Palm introduced the Pilot as its first personal digital assistant. It enabled people to organize all their data on a computer, and then sync it to the device.[35] Before being acquired by Palm, Handspring introduced the Treo 180, which merged a Palm organizer with a cell phone in 2002.[36] The Treo 180 retailed for $399 and was available with either a built-in keyboard or "Graffiti" based handwriting software. The Treo was offered by both Cingular and VoiceStream,[37] which was later acquired by T-Mobile. The Treo 180 was highly praised upon its introduction. Walter Mossberg of the *Wall Street Journal* called the Treo 180 "the best combination of a phone and a personal digital assistant, by far."[38] But users quickly tired of being tethered to a computer, as they increasingly kept their data in multiple locations. They also were longing for a device that was more convenient to carry, which led to the next innovation.

Thin phones. In 2004, Motorola's Razr revolutionized the cell phone industry once again by shifting the focus from handset features to phone size.[39] Motorola recognized the need for simplicity when it developed the

---

29. Al Sacco, *A Brief History of the Mobile Phone (1973-2007)*, CIO, Aug. 21, 2007, http://advice.cio.com/al_sacco/a_brief_history_of_the_mobile_phone_1973_2007.

30. *Id.*

31. *Bellsouth, IBM Unveil Personal Communicator Phone*, MOBILE PHONE NEWS, Nov. 8, 1993, http://findarticles.com/p/articles/mi_m3457/is_n43_v11/ai_14297997/.

32. Press Release, Nokia, Nokia Pioneers New Product Category with The World's First All-In-One Communicator (Mar. 13, 1996), http://press.nokia.com/PR/199603/775981_5.html.

33. *Id.*

34. *Id.*

35. Walter S. Mossberg, *A Palm-Size Computer That's Easy to Use and Cheap—Finally*, WALL ST. J., Mar. 28, 1996, at B1.

36. *Handspring Treo Communicator Available Nationwide to U.S. Customers*, BUS. WIRE, Feb. 11, 2002.

37. *See id.*

38. Walter S. Mossberg, *Mossberg's Mailbox*, WALL ST. J., Feb. 28, 2002, at B8.

39. Sacco, *supra* note 29.

Razr.[40] Initially conceived as an "iconic, image-leading, low-sales-volume" product, the Razr exceeded expectations with sales topping the company's total lifetime projections just three months after its August 2004 release.[41] Roger Jellicoe, manager of the Razr development project, recognized the phone's potential and knew that it could "change the industry."[42] He insisted that "once you picked up the Razr and used it, you never wanted another phone."[43]

The Razr became the top-selling phone in the United States in 2005 and held that position until the third quarter of 2008, when the iPhone 3G took the lead.[44] Motorola's profits, however, began to slide well before the Razr was overturned as the most popular phone.[45] The price of the phone plummeted and new models did little to boost revenue, as Motorola struggled to sell its high-end phones. The revenues of Motorola's mobile-device division declined by over one third in 2007.[46] In that same quarter, Motorola posted a 94 percent decline in net profit.[47]

Smartphones. The next revolution in handsets connected personal digital assistants to the Internet. In May 2009, Morgan Stanley Research described the migration to Internet-connected mobile devices, including smartphones, as "one of the biggest opportunities in the history of the technology industry."[48] "Smartphones" are cell phones that have many features of a desktop computer and are connected to the Internet. In addition to allowing people to make calls and check e-mail, smartphones can run programs or "apps" designed by third-party developers.

Smartphones have been around for more than a decade. Yet of the billion-plus mobile phones operating throughout the world, only ten percent are estimated to be smartphones, suggesting tremendous growth potential.[49] Gartner Research estimates that sales of smartphones will

---

40. Scott D. Anthony, *Motorola's Bet on the Razr's Edge*, HARV. BUS. SCH. WORKING KNOWLEDGE, Sept. 12, 2005, http://hbswk.hbs.edu/archive/4992.html (reprinted from Scott D. Anthony, *Making the Most of a Slim Chance*, 3 STRATEGY & INNOVATION, July–Aug. 2005).

41. *Id.*

42. *Id.*

43. *Id.*

44. Joshua Topolsky, *iPhone 3G Overtakes the RAZR as Best-Selling Domestic Handset*, ENGADGET, Nov. 10, 2008, http://www.engadget.com/2008/11/10/iphone-3g-overtakes-the-razr-as-best-selling-domestic-handset/.

45. Sara Silver & Roger Cheng, *Motorola Profit Falls 94%, and Icahn Puts on Pressure*, WALL ST. J., Oct. 26, 2007, at B2, *available at* http://online.wsj.com/article/SB119330045101471127.html.

46. *Id.*

47. *Id.*

48. MORGAN STANLEY RESEARCH, APPLE INC., May 26, 2009, at 3.

49. Josh Quittner, *The Pre: Palm's Plot to Take on the iPhone*, TIME, June 15, 2009, at 38, *available at* http://www.time.com/time/magazine/article/0,9171,1902833,00.html.

increase by over 27 percent in 2009 to approximately 170 million units.[50] Juniper Research predicts smartphones will account for the majority of all mobile phones in the near future.[51]

In 2005, Nokia launched the N series, a new line that combined a web browser, video, music and pictures into a single phone. According to analysts (who evidently could not see BlackBerry or the iPhone on the horizon), the devices moved Nokia a generation ahead in the race to build the first real smartphone.[52] But it was Research in Motion (RIM) and not Nokia that developed the smartphone segment. Although RIM's BlackBerry was not the first wireless device with reliable e-mail access, it popularized mobile e-mail among business professionals because of its integration with Microsoft Exchange servers and strong encryption. "Push" e-mail alerted users whenever they received a new e-mail without having to continually check the server. Large corporations adopted the device en masse; for example, in February 2000, RIM announced a deal with Solomon Smith Barney to supply thousands of devices to its employees.[53] By December 2000, RIM had at least 115,000 BlackBerry subscribers,[54] and by March 2001, RIM had at least 400,000, 70 percent of whom were connected through their corporate servers.[55] In January 2002, over 13,000 corporations allowed their employees to access their e-mail on a BlackBerry.[56] In 2002, RIM introduced the BlackBerry 5810, which combined the BlackBerry's e-mail capabilities with wireless voice functionality.[57]

Rival handset makers were trying to topple BlackBerry in the

---

50. Press Release, Gartner Inc., Gartner Says Worldwide Mobile Phone Sales Declined 6 Per Cent and Smartphones Grew 27 Per Cent in Second Quarter of 2009 (Aug. 12, 2009), http://www.gartner.com/it/page.jsp?id=1126812 (reporting that "[s]martphone sales were strong during the second quarter of 2009, with sales of 40.9 million units in line with Gartner's forecast of 27 per cent year-on-year sales growth for 2009"); *see also* Press Release, Gartner Inc., Gartner Says Worldwide Smartphone Sales Reached Its Lowest Growth Rate With 3.7 Per Cent Increase in Fourth Quarter of 2008 (Mar. 11, 2009), http://www.gartner.com/it/page.jsp?id=910112 [hereinafter Gartner Fourth Quarter 2008].

51. Marin Perez, *App Stores to Fuel Smartphone Growth*, INFO. WK., Mar. 9, 2009, http://www.informationweek.com/news/personal_tech/smartphones/showArticle.jhtml?articleID=215801364.

52. Adam Smith, *Nokia Plays It (Not Too) Smart*, TIME, Aug. 24, 2009, at GB1.

53. Mark Guibert, *Research In Motion, Ltd—Research in Motion to Supply BlackBerry Wireless*, CAN. STOCKWATCH, Feb. 8, 2000.

54. *Research In Motion Blackberry Subscribers Now 115,000*, DOW JONES NEWS SERVICE, Dec. 20, 2000.

55. Christine Y. Chen & Ellen Florian, *8 Wireless E-Mail*, FORTUNE, Mar. 19, 2001, at 74, *available at* http://money.cnn.com/magazines/fortune/fortune_archive/2001/03/19/299201/index.htm.

56. *AT&T Wireless and Research In Motion to Offer Integrated Wireless Device for Managing Email and Phone Calls*, CAN. NEWSWIRE, Jan. 29, 2002.

57. Colin Duwe, *RIM BlackBerry 5810 Wireless Phone/Handheld*, TECHREPUBLIC, June 24, 2002, http://articles.techrepublic.com.com/5100-10878_11-1054578.html.

smartphone segment, but with less success. In 2001, Kyocera introduced the Kyocera 6035.[58] The Kyocera 6035 was the first widely available smartphone with a Palm operating system.[59] It was described as "the first really good PDA-equipped phone" by Walter Mossberg.[60] In 2002, Danger, Inc. in conjunction with T-Mobile introduced the T-Mobile Sidekick.[61] The Sidekick was hailed as a "breakthrough wireless device" because it was the first device to offer user friendly e-mail, web surfing, and instant messaging at a price affordable to consumers rather than only business people.[62] The device originally retailed at subsidized price of $199 (after a $50 mail-in rebate) with unlimited data use for $39.99.[63]

The next major upheaval within the smartphone segment was launched by Apple in 2007. Where the BlackBerry succeeded among corporate users, the iPhone succeeded among mass-market users. Smartphone productivity features of the iPhone included email, text messaging, web browsing, contacts, a calendar, and a notepad. The iPhone also came equipped with a built-in camera and a voice recorder. It had the capability to operate on a 3G or Wi-Fi network,[64] which allowed users to download data at relatively high speeds. The iPhone also had the capability to sync emails, contacts and calendars wirelessly; it also had a search feature for users to find items in its standard applications.

Despite the many impressive features that made it so popular with consumers, businesses were initially disappointed that the iPhone lacked the feature that made the BlackBerry so popular: push e-mail.[65] The second generation iPhone, released in June 2008, added GPS, high-speed 3G cellular network access, and push e-mail, along with security features to lure businesses.[66] Another key feature of the iPhone was the wide range of applications available for download both over the air and

---

58. Steve Gold, *A Smartphone With Palm OS From Kyocera*, NEWSBYTES NEWS NETWORK, Mar. 2, 2001.

59. *Id.*

60. Walter Mossberg, *Kyocera's Smartphone Finds a Clever Way To Wed Palm to Cell*, WALL ST. J., Mar. 8, 2001, at B1.

61. *See* Sacco, *supra* note 29; Walter S. Mossberg, *Phone, E-mail—Even Camera—in a $199 Device*, WALL ST. J., Aug. 8, 2002, at B1.

62. Mossberg, *supra* note 61.

63. *Id.*

64. Proponents of "wireless net neutrality" often claim that AT&T disabled Wi-Fi capability on its devices. *See* Robert W. Hahn, Robert E. Litan & Hal J. Singer, *The Economics of Wireless Net Neutrality*, 3 J. COMPETITION L. & ECON. 399 (2007). The fact that many devices, including the iPhone, have such capabilities undermines those claims.

65. Daniel D. Turner, *Enterprise Hurdles Await iPhone*, EWEEK, June 22, 2007, http://www.eweek.com/c/a/Mobile-and-Wireless/Enterprise-Hurdles-Await-iPhone ("'The number one problem with the iPhone is that enterprise users want to push e-mail,' said Jack E. Gold, principal analyst at technology advising firm J. Gold Associates in Northborough, Mass.").

66. *See* Press Release, Apple Inc., Apple Introduces the New iPhone 3G (June 9, 2008), http://www.apple.com/pr/library/2008/06/09iphone.html.

through the iTunes application for personal computers; as of August 2009, there were about 65,000 available.[67] Apple's open platform has allowed independent developers to create and sell these applications, incentivizing innovation and expanding the capabilities of the device. These applications range from video games to a Microsoft Office document reader.

A feature of the iPhone that received a great deal of attention was its touch-screen interface. Unlike many rival devices, the iPhone did not have a physical keyboard, relying instead on a touch-screen keyboard that appears on its display when prompted by the user. Users scroll through pages with the flick of a finger, and can zoom into and out of pages with two-finger pinching motions. Walter Mossberg and Katherine Boehret of the *Wall Street Journal* described this touch-screen interface as "effective, practical, and fun."[68]

By January 2009, more than 21 million iPhones had been sold.[69] As of July 2008, there were more than one billion downloads from the App Store since its launch.[70] As of May 2009, Morgan Stanley estimated that the iPhone accounted for 15 percent of global smartphone sales and 2 percent of all mobile devices.[71] Morgan Stanley predicted that iPhone's share of the smartphone sales would reach 17 percent by the end of 2010.[72] Despite these seemingly modest shares, the iPhone's popularity—and its exclusive agreement with AT&T—caught the attention of regulators.[73]

The Palm Pre hopes to become the next iconic phone within the smartphone category. The Palm Pre launched June 6, 2009 for $199 at Sprint stores.[74] The Palm team is staffed with former Apple employees and is led by Palm president Jon Rubinstein, who built the original iPod

---

67. Mark A. Kellner, *Your Tech: T-Mobile Challenges iPhone*, WASH. TIMES, Aug. 5, 2009, at B2, *avaliable at* http://www.washingtontimes.com/news/2009/aug/05/t-mobile-challenges-iphone/.

68. Walter S. Mossberg & Katherine Boehret, *The Mossberg Solution: Testing Out the iPhone—We Spend Two Weeks Using Apple's Much-Anticipated Device to See if It Lives Up to the Hype; In Search of the Comma Key*, WALL ST. J., June 27, 2007, at D1, *available at*, http://solution.allthingsd.com/20070626/the-iphone-is-breakthrough-handheld-computer/.

69. Quittner, *supra* note 49.

70. *Pre conceived; Smart-Phone Wars*, ECONOMIST, June 13, 2009.

71. MORGAN STANLEY RESEARCH, *supra* note 48.

72. *Id.* at 7.

73. *See* discussion *infra* Part II.

74. In September 2009, Palm announced "it was cutting the Pre's price to $149 with a two-year service agreement with provider Sprint Nextel Corp. and after a $150 instant rebate and a $100 mail-in rebate." Yukari Iwatani Kane & Roger Cheng, *Palm Unveils Cheaper Phone in Turnaround Drive—Thin Pixi Is Positioned as Latest Alternative to Such Rivals as Apple's iPhone; Company Reduces Pre's Price,* WALL ST. J., Sept. 10, 2009, at B9, *avaliable at* http://online.wsj.com/article/SB125247502163094859.html. The price decrease brought the Pre closer to the iPhone, which sold for $99. *Id.*

for Steve Jobs (based around a tiny hard drive he discovered at Toshiba) and developed the iMac, which helped resuscitate Apple's fortunes.[75] Analysts recognized that a wireless user's e-mail, pictures, video, and Facebook/LinkedIn/Twitter contacts were increasingly hard to manage, even on the sleek iPhone. Pre's operating system, WebOS, claims to wirelessly combine all of those data into one comprehensive contact list, without duplicates.[76] When users start typing on the Pre, WebOS pulls up a pane that searches the user's contacts and also gives the user the option to search via Google, Wikipedia or Twitter. WebOS is designed to simulate the Web itself. Accordingly, anyone who can build a website can write applications for this platform, which is why Palm expects a flood of applications for the Pre. Finally, unlike the iPhone, the Pre can run several applications simultaneously. Each application is represented by a virtual card after it launches; switching between programs requires "leafing through the cards."[77] The iPhone's significant technological lead over other smart phones likely created the impetus for Palm's innovation and potentially others.

Competition in the mobile handset market continues to be fierce. Two days after the Pre's launch, Apple unveiled a newer version of its iPhone, the iPhone 3GS. The updated model can download content faster than the iPhone 3G and features a longer battery life. Other improvements include the ability to record video, a 3 megapixel autofocus camera, and hands free voice control.[78] Finally, smartphones do not constitute the "last" category of the next new thing in handsets. Computer makers have shrunk the size of laptops down to eleven inches or smaller, creating a new class of mobile devices called "netbooks" or "minis," which have been optimized for mobility and sell for under $500. An even faster version of the netbook called "ultrathins," which are priced between $500 and $900 and weigh under five pounds, were introduced in 2009.[79] According to IDC Research, netbook sales are expected to more than double in 2009, from 11.6 million units in 2008 to 26.5 million in 2009.[80] When these devices are equipped with WiFi capability (along with a mobile data plan), they become substitutes for smartphones.

---

75. *See* Quittner, *supra* note 49.

76. *Id.*

77. *Id.*

78. *See* Press Release, Apple Inc., Apple Announces the New iPhone 3GS—The Fastest, Most Powerful iPhone Yet (June 8, 2009), http://www.apple.com/pr/library/2009/06/08iphone.html.

79. Brandon Bailey, *Makers Hope New "Ultrathin" Notebooks Fill a Niche*, SAN JOSE MERCURY NEWS, Sept. 11, 2009.

80. *Id.*

B.   *Market Dynamics: Share Changes Among Handset Makers Around the Introduction of the Iconic Device*

With major innovations in the mobile handset segment in the wireless industry coming from a number of different firms, we would expect to see changes in market share over time and the absence of a clear, dominant firm that controls access to well over half of all customers.[81] Based on analysis of the data below, we conclude that no firm, including Apple, had a dominant share of the handset market—either in the United States or globally—over our study period (2005 to 2009), and that shares are not stable over time due to innovations among new handset makers.

1.   Smartphone Segment

Market shares for smartphone sales in the United States are tracked by NPD Group, which estimated that in the first quarter of 2009, RIM's BlackBerry Curve moved past Apple's iPhone to become the best-selling consumer smartphone in the United States.[82] NPD Group estimated that RIM's share of smartphone sales in the United States increased to nearly 50 percent in 2009, while Apple's and Palm's share of that segment both declined by 10 percent each.[83] Other estimates place RIM's share of the U.S. smartphone segment at slightly over 50 percent, well ahead of Apple.[84] Apple is similarly not dominant in the global market for smartphone sales. Table 2 shows that Apple accounted for less than eleven percent of global smartphone sales as of the first quarter of 2009. Indeed, Nokia, the market leader, controlled less than half of the smartphone segment—far short of dominance—over the period studied.

---

81. Antitrust courts have considered market shares above 60 percent to be dominant. *See, e.g.*, United States v. Dentsply Int'l, Inc., 399 F.3d 181, 187 (3d Cir. 2005) ("[A] share significantly larger than 55% has been required to established [sic] prima facie market power."). Although the threshold varies across circuits, the requisite share for determining dominance appears to be above 50 percent.

82. *See* Press Release, The NPD Group, Inc., *supra* note 3.

83. *Id.*

84. *See* Jessi Hempel, *How Blackberry Does It*, FORTUNE, Aug. 31, 2009, at 92 (citing IDC data).

Table 2: Worldwide Smartphone Market Share
(Based on Units Sold), 2005-09

Company	1Q09 (%)[85]	1Q08 (%)	1Q07 (%)[86]	1Q06 (%)[87]	1Q05 (%)[88***]
Nokia	41.2	45.1	46.7	42.0	9.9
RIM	19.9	13.3	8.3	6.5	20.8
Motorola	*	*	*	5.3	*
Palm	*	*	*	5.0	18.0
HP	*	*	*	*	17.6
Dell	*	*	*	*	6.3
Apple	10.8	5.3	0.0	*	*
Sharp/HTC	5.4	4.0	7.0	*	*
Fujitsu	3.8	4.1	5.0	*	*
Others**	18.9	28.2	33.0	41.2	27.3
Total	100.0	100.0	100.0	100.0	100.0

Note: * Less than three percent share. ** Incorporates the shares of manufacturers with less than three percent share. *** Personal digital assistant share only.

As Table 2 shows, the global shares of smartphone makers are not stable over time. For example, Apple suddenly emerges on the list of leading smartphone suppliers in 2008; while other manufacturers, such as Palm and Motorola, disappear. The only exception to this rule is Nokia, which has maintained a steady share between 40 and 45 percent over the time period analyzed. To understand what drove these shifts in market share, we will briefly summarize the major developments in the smartphone segment since 2005. As our discussion makes clear, share shifts are largely driven by the continuous introduction of the next, iconic phone.

By the first quarter of 2005, personal digital assistants with integrated wireless local area network or cellular capabilities accounted

---

85. Press Release, Gartner Inc., Gartner Says Worldwide Mobile Phone Sales Declined 8.6 Per Cent and Smartphones Grew 12.7 Per Cent in First Quarter of 2009 (May 20, 2009), http://www.gartner.com/it/page.jsp?id=985912 [hereinafter Gartner First Quarter 2009] (providing 1Q08 and 1Q09 market shares).

86. Press Release, Gartner Inc., Gartner Says Worldwide Smartphone Sales Grew 29 Percent in First Quarter of 2008 (June 6, 2008), http://www.gartner.com/it/page.jsp?id=688116 [hereinafter Gartner First Quarter 2008] (providing 1Q07 market share).

87. Press Release, Gartner Inc., Gartner Says Worldwide Combined PDA and Smartphone Shipments Market Grew 57 Percent in the First Half of 2006 (Oct. 9, 2006), http://www.gartner.com/it/page.jsp?id=496997 [hereinafter Gartner First Half 2006] (providing 1Q06 market share).

88. Press Release, Gartner Inc., Gartner Says Wireless E-Mail Applications Drive Worldwide PDA Shipments Increase 25 Percent in First Quarter of 2005 (May 4, 2005), http://www.gartner.com/it/page.jsp?id=492135 (providing 1Q05 market share).

for approximately 55 percent of all PDAs shipped.[89] RIM was the leading supplier of PDAs. Palm's PDA shipments declined significantly; its market share in the PDA segment fell from 30.5 to 18 percent, its lowest market share since it entered the PDA segment in 1996.[90] Nokia's re-entry into the PDA segment with its 9300 and 9500 models enabled the company to gain a significant foothold.[91]

In the first quarter of 2006, Nokia accounted for 42 percent of the combined PDA and smartphone segment.[92] Motorola smartphone shipments roughly doubled in the first half of 2006, driven by the success of Motorola's Linux-based devices in China. Gartner presciently noted that Motorola was "not making significant progress with its Microsoft and Symbian-based smartphones and shipments of the Motorola Q have been hampered by the minimum $80 monthly service plan offered by Verizon."[93] RIM enjoyed an increase in sales of 60 percent year-on-year, lifted by the newfound popularity of the BlackBerry.[94] Palm experienced a sales decrease of 26 percent in the first half of 2006, as "the company shifted its focus on sales of its Treo smartphones."[95]

In the first quarter of 2007, Palm and Motorola disappeared from the Gartner survey of the leading providers of smartphones. In the first quarter of 2008, Nokia still enjoyed 45 percent of the global smartphone segment; Gartner credits Nokia's success to the "variety of its smartphone portfolio, which includes a number of both high-end and mid-tier models available at different price points."[96] RIM saw its share double from 2006, driven by sales of the BlackBerry Curve and Pearl. Seemingly out of nowhere, Apple became the third largest provider of smartphones with a 5.3 percent share, thanks to the introduction of the iPhone.

In the first two quarters of 2009, Nokia managed to increase its sales in the smartphone segment by introducing the Nokia 5800 into more regions.[97] Nokia's N97 smartphone "met little enthusiasm at its launch in the second quarter of 2009."[98] Apple's iPhone 3GS sold 1

---

89. *Id.*

90. *Id.*

91. *Id.*

92. Gartner First Half 2006, *supra* note 87. Nokia's share in 2006 is not directly comparable with its share in 2005 because Gartner changed the category from personal digital assistants only in 2005 to combined smartphones and personal digital assistants in 2006.

93. *Id.*

94. *Id.*

95. *Id.*

96. Gartner First Quarter 2008, *supra* note 86.

97. Gartner First Quarter 2009, *supra* note 85.

98. Press Release, Gartner Inc., Gartner Says Worldwide Mobile Phone Sales Declined 6 Per Cent and Smartphones Grew 27 Per Cent in Second Quarter of 2009 (Aug. 12, 2009), http://www.gartner.com/it/page.jsp?id=1126812.

million units in its first weekend; its sales were also boosted by Apple's expansion into a larger number of countries and its price adjustments on the 8GB iPhone 3G.[99] RIM continued to grow its share, while HTC lowered its expectations for the second half of 2009 due to product delays.[100]

2.   Other Segments of the Handset Market

Radical shifts also occurred in the non-smartphone segment of the handset market over the same time period. As in the smartphone segment, Nokia was the industry leader, yet its share was below 40 percent from 2005 through 2009. Table 3 shows shares for what Gartner calls the "mobile terminal sales to end users,"[101] which includes smartphone sales (smartphone sales accounted for 13.5 percent of all handset sales in the first quarter of 2009), but also includes simpler phones that focus on telephony and text messaging.

Table 3: Worldwide Mobile Terminal Share
(Based on Units Sold), 2005-09

Company	1Q09 (%)[102]	1Q08 (%)	1Q07 (%)[103]	1Q06 (%)[104]	1Q05 (%)
Nokia	36.2	39.1	35.7	34.0	30.4
Samsung	19.1	14.4	12.5	12.5	13.5
LG	9.9	8.0	6.2	6.5	6.3
Motorola	6.2	10.2	18.5	20.3	16.7
Sony Ericsson	5.4	7.5	8.4	6.1	5.5
BenQMobile	*	*	*	3.5	5.7
Others**	23.4	20.8	18.8	17.1	21.9
Total	100	100.0	100.0	100.0	100.0

Note: * Less than three percent share. ** Incorporates the shares of carriers with less than three percent share.

Table 3 reveals that some manufacturers, such as BenQMobile,

---

99. *Id.*

100. *Id.*

101. *Id.*

102. Gartner First Quarter 2009, *supra* note 85 (referencing data from 2008 and 2009).

103. Press Release, Gartner Inc., Gartner Says Strong Results in Asia/Pacific and Japan Drove Worldwide Mobile Phone Sales to 14 Percent Growth in the First Quarter of 2007 (May 31, 2007), http://www.gartner.com/it/page.jsp?id=506573 [hereinafter Gartner First Quarter 2007].

104. Press Release, Gartner Inc., Gartner Says Worldwide Mobile Phone Sales in First Quarter are Indicative of Another Strong Year in 2006 (May 31, 2006), http://www.gartner.com/it/page.jsp?id=492896 [hereinafter Gartner First Quarter 2006].

disappeared from the rankings entirely in 2007 after commanding over five percent of worldwide handset sales in 2005. It also shows that others, such as LG, realized a share increase of five percent in one year from 2008 to 2009. This rapidly changing marketplace landscape is not consistent with the notion of dominance.

To better understand what drove these and other radical shifts in market share, we summarize the major developments in the larger handset market, which includes smartphones (described above) and other types of handsets. Our brief history begins in the early 1990s. Once again, share shifts are frequently driven by the introduction of iconic handsets.

Motorola's (relatively) small MicroTAC, introduced in 1989, allowed it to distance itself from rival device makers.[105] By the middle of the 1990s, however, Nokia and Ericsson took about five percentage points from Motorola's share, causing Motorola's share to fall from 65 to 60 percent.[106] Nokia and Samsung took additional share from Motorola over the subsequent decade, leaving Motorola with less than 20 percent by the middle of the decade. The Nokia 6100 series, introduced in November 1997, featured extended battery life, games, and could operate on two network technologies (i.e., it was a "dual-mode" handset).[107] The Samsung SCH-1000 made Sprint PCS the "first CDMA [Code Division Multiple Access] carrier to offer wireless consumers a choice of phones" in 1997.[108] The phone was the lightest CDMA phone at the time.[109] Motorola's slide was reversed with the introduction of the popular and iconic Razr in 2004.

In 2006, Nokia and Motorola accounted for over half of worldwide mobile phone sales.[110] Led by its wideband-CDMA phones, Nokia was the preferred brand in Western Europe, Central Eastern Europe, the Middle East, Africa, and Asia.[111] Motorola faced increasing competition in the supply of thin phones.[112] Samsung fell further behind Motorola.[113] In 2007, Nokia's continued strong sales were driven by its multimedia-rich phones;[114] it introduced the 5200 and 5300 in the end of 2006, and

---

105. Wolinsky, *supra* note 26.

106. *Id.*

107. *Nokia Introduces Next Generation Product Family For GSM*, Bus. Wire, Nov. 11, 1997.

108. *Sprint PCS Announces Availability of Samsung Phone; Samsung Phone Becomes Second Phone Option for Sprint PCS Customers*, Bus. Wire, Aug. 21, 1997.

109. *Id.*

110. Gartner First Quarter 2006, *supra* note 104.

111. *Id.*

112. *Id.*

113. *Id.*

114. Gartner First Quarter 2007, *supra* note 103.

it introduced the Nokia 6300 in 2007.[115] Nokia sold close to 1 million Eseries devices to business customers.[116] It was on the verge of launching the 2630 and the Navigator.[117] Motorola lost nearly 2 percentage points of market share; it introduced the Razr2 with the hope of stimulating sales.[118] Samsung's market share remained unchanged relative to 2006, as it focused on "rich features and ultra slim design."[119] Sony Ericsson enjoyed modest share growth driven by both high-end models (K800 and W880) as well as the low and mid-tier products (W300, W200, and the K310).[120] LG also enjoyed share growth via the introduction of the LG Prada as well as new colors of the K800 Chocolate phone.[121]

In 2008, Nokia maintained its market leadership due in part to strong sales in the ultra-low-cost segment.[122] Samsung surpassed Motorola in sales by focusing on touch-screen devices.[123] LG overtook Sony Ericsson to become the fourth-largest handset vendor, in part by focusing on touch-screen devices similar to the iPhone,[124] including the LG Prada, Shine, and KF600. Sony Ericsson blamed its weak results on difficult conditions in the Western European market, which led to a weakening in the demand for high-end phones.[125]

In 2009, certain handset makers once again experienced significant share shifts. Relative to the first quarter of 2008, Motorola lost four percentage points in its market share by the first quarter of 2009 (from 10.2 to 6.2 percent); Samsung saw its share increase by five percentage points (from 14.4 to 19.1 percent), driven by the introduction of the Omnia, Tocco, and Pixon touch-screen handsets.[126] Motorola appears not to have found a successor to its once-dominant Razr.

II.   WHAT MAKES THE IPHONE SPECIAL YET NOT A MUST-HAVE INPUT FOR WIRELESS CARRIERS?

Economists are concerned about exclusive contracts between an upstream input provider and a downstream distributor if the excluded input is needed by a distributor's rivals to effectively compete. Inputs that

---

115. *Id.*

116. *Id.*

117. *Id.*

118. *Id.*

119. *Id.*

120. *Id.*

121. *Id.*

122. Press Release, Gartner Inc., Gartner Says Worldwide Mobile Phone Sales Increased 14 Per Cent in First Quarter of 2008 (May 28, 2008), http://www.gartner.com/it/page.jsp?id=680207.

123. *Id.*

124. *Id.*

125. *Id.*

126. Gartner First Quarter 2009, *supra* note 85.

are deemed essential to preserve downstream competition are called must-have inputs.[127] There are a few prominent examples of must-have inputs in the communications industry.[128] Must-have inputs are likely to be especially rare in technology markets where rapid innovation causes once-dominant inputs to be dated in a short period of time. By limiting access to must-have inputs, the distributor may impair competition in one of three ways: (1) discouraging entry, (2) encouraging exit, or (3) raising a rival's operating costs.[129] Consistent with the economic view of exclusive dealing, courts have also focused on whether an input is "essential" or must-have in assessing the merits of cases involving exclusionary conduct.[130] In this section, we analyze whether the iPhone would satisfy this must-have criterion that law and economics recognize as being necessary to justify intervention.

---

127. Patrick Rey & Jean Tirole, *A Primer on Foreclosure*, *in* 3 HANDBOOK OF INDUSTRIAL ORGANIZATION 2145, 2220 (Mark Armstrong & Robert H. Porter eds., 2007) ("An input produced by a dominant firm is essential if it cannot be cheaply duplicated by users who are denied access to it.").

128. For example, the Federal Communications Commission has determined that the television rights to a professional sports team that has been granted an exclusive (regional) territory by a league constitute a must-have input for competitive distributors of video programming. *See, e.g.,* Applications for Consent to the Assignment and/or Transfer of Control of Licenses, *Memorandum Opinion & Order*, 21 FCC Rcd. 8203, 8259 (2006) (finding that a video distributor's "ability to gain access to [regional sports networks] and the price and other terms [or] conditions of access can be important factors in its ability to compete with [the distributor's] rivals.").

129. Rey & Tirole, *supra* note 127, at 2153 ("[W]e will define foreclosure as a situation in which: (i) a firm dominates one market (bottleneck good); and (ii) it uses its market power in the bottleneck good market to restrict output in another market, perhaps but not necessarily by discouraging the entry or encouraging the exit of rivals."); *see also* Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price*, 96 YALE L.J. 209, 234 (1986) ("The simplest and most obvious method by which foreclosure of supply can raise rivals' costs is the purchaser's obtaining exclusionary rights from all (or a sufficient number of) the lowest-cost suppliers, where those suppliers determine the input's market price. Competitors of the purchaser experience a cost increase as they necessarily shift to higher cost suppliers or less efficient inputs. Antitrust literati know this as the 'Bottleneck' or 'essential facilities' problem.").

130. *See, e.g.*, MCI Commc'ns Corp. v. AT&T, 708 F.2d 1081, 1132–33 (7th Cir. 1983) (stating that plaintiff must prove "(1) control of the essential facility by a monopolist; (2) a competitor's inability practically or reasonably to duplicate the essential facility; (3) the denial of the use of the facility to a competitor; and (4) the feasibility of providing the facility."). This general focus on ensuring that rivals maintain the ability to constrain dominant firms' prices is also at the heart of the Federal Communication Commission's regulation of affiliated cable programming. *See* 47 U.S.C. § 536(a)(3) (which orders the Federal Communications Commission to promulgate rules that "contain provisions designed to prevent a multichannel video programming distributor from engaging in conduct the effect of which is to unreasonably restrain the ability of an unaffiliated video programming vendor to compete fairly by discriminating in video programming distribution on the basis of affiliation or nonaffiliation of vendors in the selection, terms, or conditions for carriage of video programming provided by such vendors.").

A.   Identifying the Key Attributes of the iPhone

The iPhone has attracted significant attention since its debut in the summer of 2007, when it drew long lines of fanatical followers who waited for days in front of Apple retail stores and created a scene that was "[p]art street theater, part 'iPhone slumber party.'"[131] As described above, there are many features of the device that make it an attractive product. Based on analyst reviews, we have identified the following seven features as being the most important attributes:

- As with the iPod, the iPhone syncs easily with Apple's popular iTunes software.
- It supports thousands of applications via its App Store.
- The iPhone's touch-screen interface features "multi-touch" capabilities.
- It supports video streaming of media files.
- It runs over a 3G data network.
- The built-in camera allows users to upload images to sites like Facebook.
- It includes a GPS chipset that allows users to pinpoint their exact geographic locations.

While there are myriad other features available on the iPhone, these seven appear to be the ones that set the iPhone apart from the pack upon its introduction. The key question for regulators is: Can wireless operators, including rural operators,[132] compete effectively in the downstream wireless services market without access to the iPhone and its key features?

B.   Are Those Attributes Currently Offered By Rival Smartphones— And if Not, Will They Soon Be Replicated or Superseded?

Based on a review of available handsets in August 2009, we conclude that several competing mobile devices replicate the key features of the iPhone. Table 4 offers a comparison of smartphones that compete with the iPhone, noting which iPhone features are currently replicated or could be replicated in the near future. Almost all of the iPhone's fundamental attributes are available in rival smartphones. The basic features of email, web browsing, contacts, and calendars are standard.

---

131. C. W. Nevius, *Wait 'Worth It,' But Unnecessary*, S.F. CHRON., June 30, 2007, at A11, *available   at*   http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/06/30/ MNGSCQOVMT1.DTL.

132. *See* Rural Cellular Association Petition, *supra* note 2.

Table 4: Key Attributes of the iPhone

Feature	Palm Pre	BlackBerry Storm	Nokia N97	HTC G1
(1) Syncs with iTunes	Yes[133]	Yes[134]	Yes[135]	Yes[136]
(2) Supports tens of thousands of applications	Not Yet[137]	Over 1000[138]	Hundreds[139]	Thousands[140]
(3) Touch screen	Yes	Yes[141]	Yes[142]	Yes[143]
(4) Video streaming	Yes[144]	Yes[145]	Yes	Yes
(5) 3G Network	Yes	Yes	Yes	Yes
(6) Digital camera	Yes	Yes	Yes	Yes
(7) GPS chipset	Yes	Yes	Yes	Yes

The first row of Table 4 shows that these competing smartphones are also capable of synchronizing with iTunes, albeit sometimes through a third-party program (as is the case with the HTC G1).[146] RIM and

133.   Philip Elmer-DeWitt, *Scooplet: the Palm Pre Syncs with iTunes*, CNNMONEY.COM, May 28, 2009, http://brainstormtech.blogs.fortune.cnn.com/2009/05. The only exception is that the Pre cannot handle old, DRM copy-protected songs.

134.   Paul Taylor, *BlackBerry's New Squeeze*, FIN. TIMES, Nov. 20, 2008, at 14, *available at* http://www.ft.com/cms/s/0/41f7d22e-b725-11dd-8e01-0000779fd18c.html?ftcamp=rss&nclick_check=1.

135.   Nokia.com, Nokia Multimedia Transfer, https://www.nokiausa.com/get-support-and-software/software/nokia-multimedia-transfer# (last visited Feb. 6, 2010).

136.   Richard Wray, *INQ Unveils Handsets with Twitter and iTunes Sync Built In*, GUARDIAN.CO.UK, Aug. 4, 2009, http://www.guardian.co.uk/technology/2009/aug/04/inq-phone-twitter-itunes-doubletwist.

137.   Troy Wolverton, *Palm's webOS Hasn't Gotten the Attention it Deserves*, SAN JOSE MERCURY NEWS, Nov. 8, 2009.

138.   Blackberry.com, BlackBerry App World, http://appworld.blackberry.com/webstore/ (last visited Feb. 6, 2010).

139.   Ovi.com, Ovi Applications, https://store.ovi.com/ (last visited Feb. 6, 2010) (counting applications listed in "Top Free" and "Best Sellers").

140.   Android.com, G1 Applications, http://www.android.com/market/ (last visited Feb. 6, 2010).

141.   Blackberry.com,   Storm   Features,   http://na.blackberry.com/eng/devices/ blackberrystorm/storm_features.jsp (last visited Feb. 6, 2010).

142.   Nokia.com, N97 Features, http://www.nokiausa.com/find-products/phones/nokia-n97/features (last visited Feb. 6, 2010).

143.   Htc.com, G1 Features, http://www.htc.com/us/products/t-mobile-g1#tech-specs (last visited Feb. 6, 2010).

144.   Sascha Segan, *Palm Pre: The Top 15 Questions Answered*, PC MAG., Jan. 9, 2009, http://www.pcmag.com/article2/0,2817,2338583,00.asp.

145.   Posting of Jason D. O'Grady to The Apple Core, YouTube on the BlackBerry Storm, http://blogs.zdnet.com/Apple/?p=2527 (Nov. 18, 2008, 09:20).

146.   The G1 can synchronize with iTunes through a program called DoubleTwist. *See* Wray, *supra* note 136.

Nokia have offered their own software which reads the iTunes XML library file and syncs to their devices. In contrast, the Palm Pre identifies itself to a PC as an iPod and syncs with iTunes directly instead of through third-party software. Although Apple temporarily disabled the Palm Pre's ability to sync directly with iTunes through an update to the music software, Palm has pushed back against Apple by updating the Pre's software so that it once again can sync with iTunes.[147] Moreover, touch-screen functionality (row 3) and the ability to stream video (row 4) and access data at fast speeds via 3G networks (row 5) are also provided by iPhone's rivals. Digital cameras (row 6) and GPS chipsets (row 7) are standard with these iPhone alternatives.

There are a few differences between the iPhone and its rivals. While competing smartphones include touch screens, the iPhone goes a step further in offering a multi-touch interface that is relatively unique among its peers. The Pre does include multi-touch features like the ability to zoom with the use of two fingers, but the status of these features are uncertain because Apple has been granted patents covering specific multi-touch capabilities used in the iPhone.[148] Another difference between the iPhone and competing products is the selection of third-party applications available for the device. As of August 2009, the iPhone's App Store has many more additional software choices than do other devices. However, this differential should narrow over time. Google's Android platform, which is used in the HTC G1, already has thousands of third-party applications, and tens of thousands of developers have downloaded the software development kit for the Palm Pre.[149] Although the iPhone had a head start in the "application wars," its advantage is not likely to last, as it seems largely due to being introduced first, rather than some intrinsically better functionality.

In summary, there is a lot of competition for the smartphone segment and several smartphones offer similar features to the iPhone. The competition among handset makers is not only leading to innovative designs, but it is also ensuring that the price for smartphones has declined to levels that many Americans can afford. Apple dropped the price of its first generation iPhone to $99 in 2009 (upon the introduction of the iPhone 3GS), and Palm reduced the price of its Pre shortly after

---

147. Jenna Wortham, *Rivalry Between Apple and Palm Intensifies*, N.Y. TIMES, Aug. 3, 2009, at B6, *available at* http://www.nytimes.com/2009/08/04/technology/companies/04palm.html.

148. Rachel Metz, *Apple disables iTunes sync feature on Palm Pre*, SEATTLE TIMES, July 15, 2009, *available at* http://seattletimes.nwsource.com/html/businesstechnology/2009477341_apustecapplepalmpre.html.

149. Jeffrey Schwartz, *Developers Gather at Palm Pre Dev Camps*, APPLICATION DEV. TRENDS, Aug. 11, 2009, http://adtmag.com/articles/2009/08/11/developers-gather-at-palm-pre-dev-camps.aspx.

its initial introduction. It seems quite plausible, based on the history of innovation in this area, that a new, iconic phone that supplants Apple's iPhone will emerge.

C.   *Even the Best Device Makers, Including Apple, Stumble at Times*

Through the introduction of the iconic BlackBerry, RIM has proven itself to be a leader in the handset industry. Expectations were high in November 2008 when RIM introduced a touch-screen smartphone, the BlackBerry Storm, to compete with the iPhone. But the Storm has proven to be somewhat of a disappointment. Some proponents of regulatory intervention in the handset market have seized on RIM's initial stumble as evidence of Apple's dominance.

The Storm received many reviews that were critical. Upon the Storm's release, Yardena Arar of *PC World* declared, "the Storm's touch interface feels like a failed experiment."[150] David Pogue, an acclaimed technology reviewer for the *New York Times*, offered harsher criticism, calling the Storm the "BlackBerry Dud," and claiming that he "[hadn't] found a soul who tried this machine who wasn't appalled, baffled or both."[151] A review in *Information Week* was severely critical of the Storm's keypad: "The full QWERTY is spacious, and gives your thumbs plenty of room, but my thumbs felt real fatigue after typing out a 100-word e-mail."[152] The reviewer went on to note that the Storm was not responsive to rotations of the phone; the phone would randomly switch from vertical to horizontal orientation even though the phone had not been rotated at all; and the camera software and video playback software both crashed the phone completely several times, requiring the reviewer to pull the battery to reset the Storm.[153] Despite such reviews, the Storm sold over one million units between November 2008 and July 2009.[154]

Some might conclude that RIM's failure to produce a device that could successfully rival the iPhone proves the iPhone's must-have nature. But the fact that the Storm was a disappointment does not mean that the

---

150. Yardena Arar, *RIM's BlackBerry Storm: Awkward and Disappointing*, PC WORLD, Nov. 19, 2008, *available at* http://www.pcworld.com/article/154212/ rims_blackberry_storm_awkward_and_disappointing.html.

151. David Pogue, *No Keyboard? And You Call this a BlackBerry?*, N.Y. TIMES, Nov. 27, 2008, at B1, *available at* http://www.nytimes.com/2008/11/27/technology/personaltech/27pogue.html.

152. Eric Zeman, *Review: Touch-Screen BlackBerry Storm Gets Mixed Verdict*, INFO. WK., Nov. 24, 2008, *available at* http://www.informationweek.com/news/personal_tech/smartphones/showArticle.jhtml?articleID=212101426.

153. *Id.*

154. Marin Perez, *Verizon Slashes BlackBerry Storm Price: RIM's Touchscreen Storm Is Now More Competitive With the $100 Apple iPhone 3G from AT&T*, INFO. WK., July 20, 2009, *available at* http://www.informationweek.com/news/mobility/smart_phones/showArticle.jhtml?articleID=218501375.

iPhone's market position is permanent. Innovation is a continuous process. BlackBerry will likely learn from its successes and failures. There is too much at stake. Indeed, RIM and Verizon are introducing the Storm 2 for the holiday season in 2009, which is expected to have better hardware, a better touch-screen input method, and Wi-Fi access.[155] And the new BlackBerry Tour, which is a smartphone that returns the traditional trackball and the elevated keyboard, has received glowing reviews.[156]

On the subject of disappointing initial debuts, it is worth noting Apple stumbled in its initial attempt to deliver a commercially successful cell phone that integrated with iTunes. In 2005, Apple partnered with Motorola and Cingular (now AT&T) to produce the ROKR, a cell phone designed by Motorola that synchronized with iTunes and could play music like an iPod.[157] Much like the BlackBerry Storm, this phone had significant deficiencies that hindered its commercial prospects. The ROKR could carry only 100 songs, regardless of the amount of memory included on the device, lacked the intuitive controls of an iPod, and took roughly an hour to transfer a complete set of songs from one's computer to the device.[158] Despite this initial stumble, Apple was able to turn around and release the iPhone within two years, which has proved to be a great success.[159] Thus, we should not assume that competitors will be unable to match or beat the capabilities of the iPhone simply because they stumble once or twice. The competitive environment can change quickly in the world of handsets.

III. THE ROLE OF EXCLUSIVE AGREEMENTS IN PROMOTING INNOVATION IN THE HANDSET MARKET IN THE UNITED STATES

Table 1 reveals that exclusive distribution agreements are often used in the handset industry. In 2002, T-Mobile was the exclusive distributor of Danger's Sidekick. Motorola's iconic Razr V3 was exclusively offered by AT&T in 2004.[160] The BlackBerry Pearl was introduced in 2006

---

155. *Id.*

156. *See, e.g.,* Ryan Kellett, *Review: The New Blackberry Tour*, NPR, Aug. 7, 2009, http://www.npr.org/blogs/alltechconsidered/2009/08/blackberry_1.html; Steve Ragan, *Review: Verizon's BlackBerry Tour 9630*, THE TECH HERALD, July 20, 2009, *available at* http://www.thetechherald.com/article.php/200929/4088/Review-Verizon-s-BlackBerry-Tour-9630.

157. Walter S. Mossberg, *Music–Playing Cellphones Hit a Flat Note: We Test New iTunes Entry And Two Other Models; Reaching the 100-Song Limit*, WALL ST. J., Sept. 14, 2005, at D1, *available at* http://solution.allthingsd.com/20050914/music-cells-hit-flat-note.

158. *Id.*

159. Apple similarly suffered losses when it replaced the Apple II with the Lisa. After almost falling into bankruptcy, it replaced the Lisa with the Mac, and the rest is history.

160. Roger O. Crockett, *Cingular: Cool Phones Ring in a Merger*, BUS. WK., Oct. 26, 2004,

under an exclusive contract with T-Mobile.[161] AT&T exclusively offered the BlackBerry Curve in 2007.[162] More recently, AT&T was the exclusive distributor of the iPhone; Verizon was the exclusive distributor of the Storm; and Sprint was (at least through 2009) the exclusive distributor of the Palm Pre and the Kindle. The first Google phone powered by the Android operating system, the G1, is sold exclusively through T-Mobile; so is T-Mobile's second generation Android phone.

The question to which we now turn is: Why do manufacturers and carriers enter into exclusive contracts in the first place? Before considering the benefits, we briefly discuss the costs of aligning with a single carrier from the perspective of a handset maker like Apple. By agreeing to an exclusive agreement with AT&T, Apple greatly reduced the number of consumers its iPhone would reach. At the time of Apple's exclusive deal in 2007,[163] AT&T had roughly a 30 percent share of the U.S. wireless market. Consequently, an exclusive agreement with AT&T meant that approximately 70 percent of wireless customers would be unable to use the iPhone on their existing network. Palm's exclusive deal with Sprint regarding the Pre is even more curious, given Sprint's roughly 18 percent market share in 2009.

Table 5: Estimated Market Shares of U.S. Wireless Market, March 2009[164]

	Verizon	AT&T	T-Mobile	Sprint	Others
Market share	32%	29%	12%	18%	9%

Table 5 shows that the market for U.S. wireless services is not highly concentrated. Indeed, Bank of America-Merrill Lynch estimates that concentration among wireless carriers is less than all but one of the 26 other countries in its survey.[165] Given this lack of concentration, when a handset maker like Palm aligns itself with a single carrier like Sprint, the handset maker effectively cedes a share of potential sales (in this case, roughly 82 percent of U.S. wireless subscribers).

---

http://www.businessweek.com/bwdaily/dnflash/oct2004/nf20041026_3765_db016.htm.

161. *T-Mobile USA and RIM Introduce the Ultra-Sleek BlackBerry Pearl*, MARKET WIRE, Sept. 7, 2006, http://findarticles.com/p/articles/mi_pwwi/is_200609/ai_n16704831/.

162. Joseph Palenchar, *AT&T Throws a BlackBerry Curve*, TWICE, May 30, 2007, *available at* http://www.twice.com/article/262742-AT_T_Throws_A_BlackBerry_Curve.php?rssid=20328.

163. Implementation of Section 6002(B) of the Omnibus Budget Reconciliation Act of 1993, *Thirteenth Report*, 24 FCC Rcd. 6185, 6321 (2009).

164. US WIRELESS DATA MARKET Q3 2009 UPDATE (Chetan Sharma Consulting), Nov. 2009, at 17.

165. G. Campbell, Global Wireless Matrix 2Q09, Bank of America/Merrill Lynch Research, June 25, 2009.

While it is certainly possible to induce subscribers of rival networks to change networks and incur the associated switching costs, the majority of handset purchases made pursuant to an exclusive agreement are made by the exclusive carrier's customers. For example, two-thirds of iPhone activations in the second quarter of 2009 were for existing AT&T customers.[166] Sales of the Palm Pre followed the same pattern: the CEO of Sprint claimed that initial sales for the Pre—an exclusive handset offered by Sprint—stemmed largely from Sprint's existing base of customers.[167] Accordingly, from the handset maker's perspective, the cost of entering into an exclusive contract is likely to be economically significant. Because handset makers would not enter into exclusives unless they were profitable, it must be the case that Palm's expected gains from the transaction exceeded these significant costs.

A.   Procompetitive Motivations for Exclusive Handset Contracts

So what motivates these exclusive contracts? Handset makers seek exclusive agreements with carriers, not as part of some anticompetitive scheme to foreclose the carrier's downstream rivals, but to share the enormous risk associated with launching a new device, to align the incentives of the carrier with the handset maker, and to ensure network quality. Economic research has demonstrated that voluntary, exclusive contracts are often motivated by procompetitive reasons.[168] From the perspective of a handset maker like Apple, aligning with a single carrier like AT&T ensures that Apple does not incur all of the downside in the event that the phone flops. The agreement also ensures that AT&T will make iPhone-specific investments such as marketing support, handset subsidies, and modifying its network to accommodate the bandwidth-intensive applications. The network upgrades that AT&T had to make to support the iPhone suggest that the iPhone would not be immediately available to operate on other carriers' networks that had not been similarly upgraded.

---

166. One third of iPhone activations in the second quarter of 2009 were for customers new to AT&T. *See* Michelle Maisto, *iPhone 3GS Launch was AT&T's Best Day Ever*, EWEEK, July 23, 2009, http://www.eweek.com/c/a/Mobile-and-Wireless/iPhone-3GS-Launch-was-ATandTs-Best-Day-Ever-137054/.

167. Roger Cheng, *Sprint's Woes Continue Despite Palm Pre Debut*, WALL ST. J., July 30, 2009, at B9, *available at* http://online.wsj.com/article/SB124886537730589779.html (quoting Dan Hesse saying, "Pre buyers have largely been existing Sprint subscribers.").

168. For a review of the economic literature on the welfare effects of vertical restraints, *see* Francine Lafontaine & Margaret Slade, *Exclusive Contracts and Vertical Restraints: Empirical Evidence and Public Policy*, *in* HANDBOOK OF ANTITRUST ECON. 391 (Paolo Buccirossi, ed., 2008), *available at* http://www2.warwick.ac.uk/fac/soc/economics/staff/academic/slade/wp/ecsept2005.pdf.

1.   Risk Sharing

Exclusive contracts may correct dealer-incentive issues that occur when the manufacturer wants the dealer to invest up front in specific facilities or human capital to provide better service to consumers.[169] Applied here, handset manufacturers often require operators, as part of an exclusive agreement, to commit to investing in technical support for new handsets. But perhaps the largest commitment carriers make to the handset maker is to subsidize the cost of the handset so that it is more affordable to consumers. The (first-generation) iPhone models debuted unsubsidized by AT&T at $499 and $599.[170] AT&T subsidized the second-generation iPhone.[171] In particular, AT&T paid Apple $300 per 8 gigabyte iPhone 3G,[172] leaving AT&T's customers the balance of $199 (equal to the $499 total price less the $300 subsidy).[173] Verizon pays RIM roughly $200[174] toward the $399 total price of the Storm, leaving its customers the balance of $199. Sprint pays Palm at least $340 for each Pre,[175] leaving its customers a more reasonable charge of $199 after rebate. Even lower-end phones can draw $100 subsidies from carriers.[176] Such subsidies are properly considered brand-specific commitments that are secured via the exclusive agreement. Marketing support or promotion, which may also be considered a form of up-front investment, is discussed below.

Risk sharing is even more important in the supply of mobile handsets given the combination of the massive upfront costs of developing a new phone and the uncertainty of demand for the new product. The shortcomings of the ROKR and the Storm highlight the demand uncertainty faced by handset makers; even the backing of a big carrier cannot guarantee success. With respect to the significance of the upfront costs, Apple reportedly incurred $150 million in developing the iPhone;[177] Palm incurred $393.8 million in research and development in

---

169. *Id.* at 397.

170. Press Release, Apple Inc., Apple Sets iPhone Price at $399 for this Holiday Season (Sept. 5, 2009), http://www.apple.com/pr/library/2007/09/05iphone.html.

171. Arik Hesseldahl, *Why AT&T May Deep-Discount the iPhone*, Bus. Wk., May 1, 2008, http://www.businessweek.com/technology/content/apr2008/tc20080430_591776.htm.

172. Leslie Cauley, *AT&T: "We're all about wireless,"* USA Today, July 31, 2008, *available at*   http://www.usatoday.com/tech/wireless/phones/2008-07-31-att-iphone-stephenson-apple_N.htm.

173. Jamie Lendino, *Study: BlackBerry Storm Costs More to Build than iPhone*, PC Mag., Jan. 30, 2009, *available at* http://www.pcmag.com/article2/0,2817,2339876,00.asp.

174. Sara Silver, *Apple, RIM Outsmart Phone Market*, Wall St. J., July 20, 2009, at C6, *available at* http://online.wsj.com/article/SB124805149501664033.html.

175. Sinead Carew, *Sprint Reports Big Rise in Cell Subsidies*, Reuters, Aug. 4, 2009, *available at* http://www.reuters.com/article/hotStocksNews/idUSTRE57373020090804.

176. Silver, *supra* note 174.

177. *The Consumer Wireless Experience: Hearing Before the Senate Committee on Commerce, Science & Transportation*, 111th Cong. 9 (2009) (statement of Barbara S. Esbin, Senior Fellow

fiscal years 2008 and 2009, leading up to the launch of the Pre.[178] Motorola invested an "unheard of" $20 million in research and development for its MicroTAC device that debuted in 1989.[179] Handset makers appear to value having a partner that has access to a base of installed subscribers to share some of their R&D risk. Although the exclusive agreement impairs the handset maker's access to large slices of the market (by virtue of each carrier's limited market shares), the agreement does give the handset maker assurance that at least some installed base of customers will likely purchase the new device.

2.   Marketing Support

Exclusive contracts also facilitate the coordination of marketing efforts between the downstream distributors and the upstream manufacturers of a product. In the absence of an exclusive agreement, downstream distributors will be hesitant to expend resources marketing a product because some of the benefits of marketing will accrue to their rivals. To make matters concrete, consider Verizon's decision to market the BlackBerry Storm if customers who see the advertisement can choose to buy the Storm from a rival carrier. Because Verizon would not be able to appropriate the entire benefit of its marketing expenditures in this case, Verizon would invest less in marketing.

This problem is known as the "free-rider" problem in economics; rather than reap the benefits of their own marketing investments, firms will attempt to appropriate the benefits of their rivals' marketing campaigns. Exclusive contracts between producers and distributors allow distributors to appropriate the entire benefit of their marketing expenditures. In some circumstances, exclusive contracts can induce downstream firms to invest in the optimal level of marketing.[180] This coordination of marketing efforts between the handset maker and the carrier also benefits consumers. As two prominent competition economists recently wrote, when firms are able to free-ride off the marketing expenditures of other firms, "competition between retailers is likely to generate an insufficient level of service from both the firms' and the consumers' point of view. Vertical restraints are thus likely to be socially desirable."[181] Exclusive agreements are one type of vertical

and Director, The Progress and Freedom Foundation), *available at* http://www.pff.org/issues-pubs/testimony/2009/090617-Esbin-Exclusive-Handset-Testimony.pdf.

178. Palm, Inc., Annual Report (Form 10-K), at 8 (July 24, 2009).

179. Wolinsky, *supra* note 26.

180. Frank Mathewson & Ralph Winter, *An Economic Theory of Vertical Restraints*, 15 RAND J. OF ECON. 27 (1984).

181. Patrick Rey & Thibaud Vergé, The Economics of Vertical Restraints 18, (June 2005) (prepared for the conference on Advances in the Economics of Competition Law in Rome 2005).

restraint that can correct the free-rider problem.

The large investments AT&T has made in marketing the iPhone suggest that the exclusive contract between Apple and AT&T has benefitted both Apple and consumers. AT&T's 2008 Annual Shareholder Report suggests that its large outlays for advertising have been a significant factor in driving iPhone sales.[182] AT&T attributed increased sales and advertising expenses of $572 million to "Apple iPhone related costs" for its 2007 fiscal year.[183] Expenditures of this magnitude would not have been likely in the absence of an exclusive agreement covering the iPhone.

3.   Quality Assurance and Reputation

Exclusive deals can also benefit upstream manufacturers and consumers by assuring product quality.[184] Specifically, exclusive dealing allows a manufacturer to closely monitor the distribution of its product so that the product does not become associated with distributors who might harm the manufacturer's brand.[185] This theory is particularly applicable to wireless handsets because the final handset product is necessarily tied to the network on which the handset is used. Thus, through an exclusive contract, a manufacturer like Apple can ensure that its handset is only used on a wireless network that can meet its exacting demands. AT&T invested an additional $2.5 billion in spectrum licenses to accommodate the release of the iPhone 3GS.[186]

B.   *Why the Critics of Handset Exclusivity Are Wrong*

Critics of exclusive contracts frequently begin their analysis with a faulty premise—namely, that wireless carriers impose exclusivity provisions on handset manufacturers. Under the traditional paradigm of monopoly-leveraging, a carrier with excessive downstream market power would demand exclusivity (or even equity in the handset) as a condition of granting access to the carriers' customers. Having secured exclusivity, the carrier would then deny the must-have input to its rivals to distort downstream competition. A July 2009 letter to the *Wall Street Journal* by

---

182. AT&T, Inc., Annual Report, at 26 (2008) ("Contributing to our net additions and retail customer growth was improvement in postpaid customer turnover (customer churn) levels due to our strong network performance and attractive products and service offerings, including the Apple iPhone. The improvement in churn levels benefited from network and customer service improvements and continued high levels of advertising.").

183. *Id.* at 28.

184. Jonathan M. Jacobson, *Exclusive Dealing, "Foreclosure," and Consumer Harm*, 70 ANTITRUST L. J. 311, 358 (2002).

185. Rey & Tirole, *supra* note 127, at 2203.

186. MarketingVox.com, AT&T Buys Spectrum to Support 3G iPhone, Oct. 12, 2007, http://www.marketingvox.com/att-buys-up-spectrum-preparing-for-3g-iphone-etc-033660/.

Hu Meena, President of Cellular South, argues that the nationwide carriers were seeking to impose exclusive contracts to increase their market power: "Now, as 'kings of the jungle' they demand and get exclusive device deals to further increase their market share."[187] But that story does not appear to apply here. A review of the circumstances surrounding the development of the iPhone reveals that the exclusivity agreement was the result of *Apple's* extremely aggressive negotiating strategy. As we demonstrate below, it is often the handset manufacturers, and not the carriers, who are seeking the exclusive agreements.

For example, Apple viewed an exclusive contract with AT&T as a means to secure what has been described as an "unprecedented" position in the development of a wireless handset.[188] As part of this exclusive deal, Apple demanded that AT&T not place AT&T's brand on the phone, that AT&T distribute to Apple a portion of its monthly subscriber revenues, that the iPhone would only be available at Apple or AT&T stores, and that Apple maintain sole discretion as to whether to repair or replace defective iPhones.[189] Apple also insisted that the iPhone's development be completely secret. Apple only allowed three AT&T executives to see the phone prior to its release.[190] Verizon rejected this offer by Apple to make Verizon the exclusive distributor of the iPhone.[191] This anecdote makes clear that AT&T's exclusive agreement with Apple was not a unilateral exercise of market power on the part of AT&T, but rather the result of hard bargaining on the part of Apple.

While the story of Palm's exclusive with Sprint is less clear in terms of which party was seeking to impose the exclusivity, it certainly is not consistent with the suggestion that exclusives are motivated for anticompetitive reasons. With the Palm Pre, Sprint was hoping to start a long recovery, having lost two percent of its customers in the fourth quarter of 2008, and nearly another one percent through the second quarter of 2009.[192] Sprint CEO Dan Hesse called the Pre Sprint's

---

187. Hu Meena, Letter to the Editor, *Justice Is Right to Preserve Wireless Customer Choices*, WALL ST. J., July 13, 2009, at A12, *available at* http://online.wsj.com/article/ SB124743897048129579.html.

188. Fred Vogelstein, *The Untold Story: How the iPhone Blew Up the Wireless Industry*, WIRED MAG., Jan. 9, 2008, *available at* http://www.wired.com/gadgets/wireless/magazine/ 16-02/ff_iphone.

189. Leslie Cauley, *Verizon Rejected Apple iPhone Deal*, USA TODAY, Jan. 29, 2007, *available at* http://www.usatoday.com/tech/news/2007-01-28-verizon-iphone_x.htm; Amol Sharma, Nick Wingfield & Li Yuan, *Apple Coup: How Steve Jobs Played Hardball In iPhone Birth*, WALL ST. J., Feb. 17, 2007, at A1.

190. Sharma, *supra* note 189.

191. *Id.*

192. Robert Cyran & Jeff Segal, *Survival Mode in a Tough Market*, N.Y. TIMES, Feb. 20, 2009, at B2, *available at* http://www.nytimes.com/2009/02/20/business/20views.html (Sprint lost 1.3 million customers in the fourth quarter of 2008); Michelle Maisto, *Palm Pre Cannot Rescue Sprint from Second-Quarter Loss*, EWEEK, July 29, 2009,

"coming-out party,"[193] demonstrating to customers Sprint's reorganized customer service[194] and improved network.[195] Palm may have more to lose than Sprint.[196] Palm has been suffering for several years as its Palm OS and Windows Mobile-based phones have failed to take hold.[197] Palm reportedly teamed up with Sprint because it was a "comfortable"[198] fit—Palm has sold an increasing proportion of its devices through Sprint over the last three years.[199] Palm's former CEO Ed Colligan said that the choice of carrier "came down to a long term relationship that we continue to build."[200] It is worth noting that duration of this exclusive agreement appears to be short-lived: Verizon announced at the end of May 2009 (before Sprint had even started selling the phone) that it too would offer the Pre by the beginning of 2010.[201]

IV.   OTHER DISRUPTIVE TECHNOLOGIES ON THE HORIZON

Thus far, we have focused on competition for the supply of handsets. Because most U.S. consumers typically purchase a *bundle* of products—a handset, an operating system, and wireless service (as opposed to a standalone handset)—wireless carriers compete for consumers through the quality and coverage of their networks in addition to the handsets they offer. Accordingly, our discussion would be incomplete without an analysis of the other important areas of competition: improved networks and operating systems. As it turns out, many of the innovations that affect the mobile user's experience—and

---

http://www.eweek.com/c/a/Mobile-and-Wireless/Palm-Pre-Cannot-Rescue-Sprint-from-Second-Quarter-Loss-838762/ ("[C]ustomer numbers fell from 49.1 million at the end of the first quarter of 2009 to 48.8 million at the end of the second.").

193. Sinead Carew, *UPDATE 2-Sprint CEO Sees Pre as Sprint "Coming Out Party,"* REUTERS, June 5, 2009, http://www.reuters.com/article/idUSN0529397120090605.

194. Cecilia Kang, *Sprint Wiring Itself for a Comeback; Nation's No. 3 Bets on Palm Pre, Big Cuts*, WASH. POST, June 27, 2009, at A10, *available at* http://www.washingtonpost.com/wp-dyn/content/article/2009/06/26/AR2009062604099.html.

195. Jeffry Bartash, *Sprint Aims to Turn the Corner with Palm Pre*, MARKETWATCH, May 22, 2009, http://www.marketwatch.com/story/sprint-aims-to-turn-the-corner-with-palm-pre.

196. *Id.* ("The Pre has effectively tied the fates of the two companies together, though the stakes are much higher for Palm . . . . Although the Pre is not critical to Sprint's survival, the carrier badly needs a big hit and a burst of good publicity, if only to change how it is viewed in the marketplace.").

197. Dan Gallagher, *Palm Shares Rise Despite Sharp Revenue Miss*, MARKETWATCH, Mar. 4, 2009, http://www.marketwatch.com/story/palm-shares-up-investors-look-past.

198. Dan Gallagher, *Palm Faces 'Make-or-Break' Event with Launch of the Pre*, MARKETWATCH, May 22, 2009, http://www.marketwatch.com/story/palm-banks-future-on-pre-and-new-operating-system.

199. Palm, Inc., *supra* note 178, *at* 7.

200. Video: Palm's New Smartphone (Fox Business 2009) http://video.foxbusiness.com/v/3881383/palms-new-smart-phone.

201. Sinead Carew & Franklin Paul, *Verizon to Sell Palm Pre, New BlackBerry Phones*, REUTERS, May 28, 2009, http://www.reuters.com/article/idUSTRE54R4TP20090528.

threaten to disrupt the hegemony of today's handset makers—are occurring in these areas.

A.   Improved Networks

As of mid-2009, wireless carriers were battling to be the first to implement a 4G wireless network. There were two major 4G technologies in development: long term evolution (LTE) and worldwide interoperability for microwave access (WiMAX). Many analysts forecasted that LTE would have a momentous impact on the wireless industry.[202] Verizon, AT&T, T-Mobile, and MetroPCS are all developing LTE networks.[203] Indeed, some analysts speculated that MetroPCS, which is a relatively small carrier, would be the first to successfully implement an LTE network.[204] Verizon has announced that it will deploy LTE in 2010, while AT&T has indicated that that it will deploy LTE in 2011. In 2009, Sprint entered into a joint-venture with Clearwire and Intel to deploy a 4G WiMAX network.[205] Sprint has rolled out a WiMAX network in Baltimore and announced planned launches in other cities.[206]

Many industry observers and participants have speculated that 4G technology will have a revolutionary effect on the wireless industry. For instance, Nortel suggested that 4G mobile broadband had the potential to be a "truly disruptive technology."[207] A recent book on wireless networks, *The New World of Wireless: How to Compete in the 4G Revolution*, suggests that 4G technology will "have the potential to create major disruptions not only in the wireless sector, but in communications as a whole."[208]

B.   Improved Operating Systems

In addition to competition driven by advances in wireless carriers' networks, advances in handset operating systems promise to rearrange the entire wireless landscape. While 4G networks are months or years

---

202. Cell Life, A Primer on LTE, http://www.cellstrat.com/blog/?p=870 (last visited Feb. 10, 2010) ("The impact of LTE is so big that even powerful carriers which were on the alternate CDMA path like Verizon Wireless of United States, have decided to go with LTE in their next generation 4G evolution.").

203. *Id.*

204. *Id.*

205. Richard Grigonis, *Sprint (WiMAX) vs. Verizon (LTE)*, NGN MAG., Mar./Apr., 2009, http://www.tmcnet.com/ngnmag/0309/sprint-vs-verizon.htm.

206. *Id.*

207. Nortel.com, 4G Mobile Broadband, http://www2.nortel.com/go/solution_content.jsp?prod_id=61702 (last visited Feb. 10, 2010).

208. SCOTT A. SNYDER, THE NEW WORLD OF WIRELESS: HOW TO COMPETE IN THE 4G REVOLUTION 20 (Steve Kobrin ed., 2009).

away, the next generation of mobile operating systems is imminent. As of 2009, certain operating systems had become well-established. According to Gartner Research, roughly half of the smartphones sold worldwide in 2008 ran Nokia's Symbian operating system,[209] over 16 percent ran RIM's BlackBerry operating systems, and nearly 12 percent ran Microsoft's Windows Mobile.[210] These operating systems face increasing competition. As the *Economist* explained, a battle is raging over "Smart-Phones' Souls"—the next frontier of competition in the wireless market will focus on "software, services, and content" rather than "hardware."[211] Some of the newest entrants into the smartphone operating system market are based on the open-source software Linux, which runs everything from servers to cell phones.[212] Open sourcing offers a low-cost alternative to proprietary software, and makes it easier for third parties to develop apps for a platform that runs on many different devices.[213] Worldwide sales of Linux-based phones in 2008 were up 19 percent from the previous year, while the share of the once-popular Symbian operating systems slid significantly.[214]

In the summer of 2008, Google launched its Linux-based, open-source Android operating system with the Open Handset Alliance of 47 telecom and technology companies.[215] An increasing number of handsets run on Android. Gartner Research has estimated that Android phones comprised 20 percent of the Linux phones sold in the fourth quarter of 2008 worldwide.[216] In September 2008, T-Mobile was the first to offer an Android phone, called G1, built by HTC.[217] In August 2009, T-Mobile released in Europe and Asia its second-generation Android phone, called myTouch 3G, a version of HTC's well-received Hero. Although the myTouch 3G lacks the iPhone's multi-touch screen, it has access to the significant and growing library of apps developed for Android. The G1's earlier version of Android was not "ready for prime

---

209. *The Battle for the Smart-Phone's Soul*, ECONOMIST, Nov. 22, 2008, at 76. Symbian no longer belongs to Nokia. Nokia bought out the other stakeholders in the OS and made it open source. This had the advantage of ending Nokia's licensing costs.

210. Gartner Fourth Quarter 2008, *supra* note 50.

211. *The Battle for the Smart-Phone's Soul*, *supra* note 209.

212. Linux.org, Linus Torvalds Bio, http://www.linux.org/info/linus.html (last visited Feb. 10, 2010).

213. *The Battle for the Smart-Phone's Soul*, *supra* note 209, at 77 (suggesting software adds 20% to the cost of phones).

214. Gartner Fourth Quarter 2008, *supra* note 50.

215. Open Handset Alliance, FAQ, Nov. 2007, http://www.openhandsetalliance.com/oha_faq.html.

216. Gartner Fourth Quarter 2008, *supra* note 50 (noting that 8.4 percent of the smartphones sold in that quarter were Linux-based, up 19 percent from the previous year).

217. Android.com, Android Timeline, Oct. 21, 2008, http://www.android.com/about/timeline.html.

time," Sprint CEO Dan Hesse has said.[218] *BusinessWeek* claims that "Android has a better than decent shot" at building a substantial competitive presence.[219] Other companies, including Samsung, LG, and Motorola, are set to bring out Android-based phones in the near future.[220] Google notes that as many as 18 different Android phones will be available by the end of 2009.[221]

In mid-2009, Verizon was reportedly close to offering an Android-based Motorola phone (codenamed "Sholes"), which would support multi-touch input, an eight-megapixel camera, and powerful graphics hardware to appeal to mobile gamers. Another Motorola Android phone, named "Morisson," was reportedly being sold through T-Mobile. Confirmation of these reports is expected at the Motorola Motodev Summit in October 2009.[222] In August 2009, Motorola confirmed for its investors that it will be shipping Android-based phones.[223]

Finally, Linux Mobile (LiMo) is supported by an association of 50 technology and telecommunications companies,[224] including Samsung and Vodafone.[225] LiMo, however, differs from WebOS (which runs the Pre) and Android in that the consortium is focusing on building a flexible operating system rather than a user interface.[226] Phones built with LiMo will not have the distinctive user experiences that iPhone, Android, or WebOS phones carry; yet the software has attracted new members to the consortium for its potential to cut development costs while leaving phone makers flexible to create their own user interfaces.[227]

---

218. Ian Fried, *Sprint CEO: We're glad we waited on Android*, CNET NEWS, July 24, 2009, http://news.cnet.com/8301-13860_3-10295150-56.html.

219. Stephen H. Wildstrom, *Google's Android: Now a Contender*, BUS. WK., July 22, 2009, at 65, *available at* http://www.businessweek.com/magazine/content/09_31/b4141065675311.htm.

220. *Id.*

221. Matt Richtel, *Google: Expect 18 Android Phones by Year's End*, N.Y. TIMES, May 27, 2009, http://bits.blogs.nytimes.com/2009/05/27/google-expect-18-android-phones-by-years-end.

222. *See, e.g.,* Taylor Wimberly, *Official Multitouch to Appear in Android 2.0?*, CNET, Aug. 11, 2009, http://www.cnet.com/8301-19736_1-10307673-251.html; Taylor Wimberly, *Motorola Sholes for Verizon: New Predictions and CPU Specs*, ANDROID & ME, Aug. 7, 2009, http://androidandme.com/2009/08/news/motorola-sholes-for-verizon-new-predictions-and-cpu-specs/; Taylor Wimberly, *Motorola Morrison Specs—Next T-Mobile Android phone*, ANDROID & ME, Aug. 9, 2009, http://androidandme.com/2009/08/news/motorola-morrison-specs-next-t-mobile-android-phone/.

223. Michelle Maisto, *Android Could Aid Motorola Turnaround, Report Says*, EWEEK, Aug. 3, 2009, http://www.eweek.com/c/a/Mobile-and-Wireless/Android-a-Key-to-Motorola-Turnaround-Says-Report-744170/.

224. *The Battle for the Smart-Phone's Soul*, *supra* note 209, at 77.

225. LiMoFoundation.org, Current Members, http://www.limofoundation.org/component/option,com_limomembers/Itemid,134/ (last visited Feb. 12, 2010).

226. LiMoFoundation.org, Frequently Asked Questions, http://www.limofoundation.org/en/faqs.html (last visited Feb. 12, 2010).

227. Tricia Duryee, *Verizon, Mozilla, SK Telecom And Others Join Mobile Linux Efforts;*

Currently LiMo boasts over 30 handsets, including several models by Motorola, NEC, and Panasonic.[228]

V.   LEARNING FROM PAST MISTAKES

In dynamic industries, regulators need be more tolerant of new technologies that appear to be dominant. Unfortunately, the FCC appears not to have always heeded this advice. The agency has at times prematurely declared certain technologies as being dominant, and imposed harmful regulation. In the late 1970s, it required that wireline telephone companies "unbundle" telephone equipment from telephone services;[229] in 1981, it extended this requirement to the cellular operations of the telephone companies.[230] Accordingly, cellular providers that were affiliated with wireline telephone companies could not sell mobile handsets, nor could they offer certain additional services such as voicemail.[231] As we explained above, these regulations likely reduced welfare because handset makers could not properly incentivize wireless operators to invest in an efficient level of promotion and device-specific infrastructure.

Skeptics might ask: What is the harm from declaring a technology in a dynamic industry to be dominant? Can't the regulation, as in the case of cellular unbundling rules, be reversed? Unfortunately, reversing an inefficient policy may not eliminate the harm, especially when the harm results from delaying the introduction of a new technology. After imposing regulations on cellular carriers in the early 1980s that barred the bundling of handsets with service, the FCC eventually recognized that competition between the cellular licensees rendered such regulation unnecessary, and in 1992, it allowed the bundling of cellular service and mobile phones.[232] In the intervening eleven years, however, all the potential economies of scope associated with selling handsets and wireless services (and the associated consumer benefits) were squandered. And the incentive problems identified above concerning handset makers and distributors could not be corrected due to regulatory obstacles.

Enterprise Targeted, MOCONEWS, May 14, 2008, http://moconews.net/article/419-verizon-mozilla-sk-telecom-and-others-join-mobile-linux-efforts/.

228. LiMoFoundation.org, LiMo Handsets, http://www.limofoundation.org/solutions/index.php (last visited Feb. 12, 2010).

229. Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry), *Final Decision*, 77 F.C.C.2d 384 (1980).

230. An Inquiry Into the Use of the Bands 825-845 MHz and 870-890 MHz for Cellular Communications Systems, *Report & Order*, 86 F.C.C.2d 469 (1981).

231. *Id.* The Commission similarly declared DSL providers to be dominant in the late 1990s, and forced them to resell their services at regulated prices—despite the fact that cable modem subscriptions vastly exceed DSL subscriptions.

232. Bundling of Cellular Customer Premises Equipment and Cellular Service, *Report & Order,* 7 FCC Rcd. 4028 (1992).

We are not the first to link the FCC's regulatory intervention in the mobile handset market to reductions in consumer welfare. In a seminal article published in 1997, Professor Jerry Hausman of MIT estimated that the Commission's delay in introducing cellular service cost Americans roughly $25 billion per year in lost welfare.[233] He attributes the delay to, among other things, the Commission's decision to delay the operations of the incumbent wireline network until the non-wireline network could begin operations. This type of interference, like the ban on bundling handsets and wireless service, squarely fits the paradigm of prematurely declaring dominance. Dr. Hausman concludes that "regulatory indecision made a new good, cellular telephone, unavailable in the United States when it was being offered in Scandinavia and Japan using equipment invented by AT&T Bell Labs."[234]

Economists Robert Crandall and Thomas Hazlett also blame the slow development of the wireless industry in the United States on the FCC's overzealous oversight.[235] When compared to local wireline communications, however, Drs. Crandall and Hazlett credit the relatively deregulatory climate of the wireless industry free of "rate controls, unbundling requirements, or mandated resale" for its greater competition.[236] To the extent that the FCC's intervention in the mobile handset market in the 1980s slowed the pace of innovation, the associated consumer benefits of those new services were also delayed.

CONCLUSION

Our overarching conclusion is that regulators should be very reluctant to intervene in the mobile handset market given the pace of innovation, the lack of any apparent anticompetitive motivation for exclusive contracts, and the significant efficiencies associated with exclusive agreements. Given the pace of technology development in the mobile handset market, the iPhone's position is hardly guaranteed. A new device could render the iPhone obsolete quickly. Ironically, the best way to replace to the iPhone could be through an exclusive contract between a handset maker and some other carrier.

Regulators may not fully incorporate the economic cost of intervention in their decision making because it is hard to assess the

---

233. *See, e.g.*, Jerry Hausman, *Valuing the Effect of Regulation on New Services in Telecommunications*, *in* BROOKINGS PAPERS ON ECON. ACTIVITY: MICROECONOMICS 1, 3 (Clifford Winston et al. eds., 1997).

234. *Id.* at 20.

235. Robert W. Crandall & Thomas Hazlett, *Telecommunications Policy Reform in the United States and Canada, in* TELECOMMUNICATIONS LIBERALIZATION ON TWO SIDES OF THE ATLANTIC 8, 30 (Martin Cave & Robert W. Crandall, eds., 2001).

236. *Id.* at 33.

innovation that would have occurred in the absence of such intervention. In contrast, the benefits of intervention are easier to assess, and there is often a constituency that stands to reap those benefits. For example, some small rural carriers argue that terminating the iPhone-AT&T exclusive agreement would enable them to offer the iPhone and more aggressively compete with AT&T for customers.

But do rural carriers or non-AT&T national carriers need access to the iPhone to compete effectively with AT&T? Our analysis in Part II shows that, while the iPhone is certainly special, there is nothing about it that constitutes a must-have input from the perspective of economics. The question should not be whether a rural carrier would benefit with access to the iPhone (it likely would), but rather whether such a carrier needs the iPhone to constrain the price of AT&T's wireless offerings, so that consumers would benefit. We are not aware of any evidence that AT&T has been able to raise its wireless prices as a result of its exclusive contract with Apple.

Regulations that prohibited exclusive contracts for handsets also would impose significant costs, as described above in Part III. Specifically, the efficiencies made possible by an exclusive agreement—superior innovation in design, coordination and development between device manufacturers and network providers to optimize the consumer experience with the device and the supporting services and shared risk in deploying massive marketing and consumer awareness campaigns—would no longer be available to handset makers, wireless carriers, and their customers. These are real costs, but because they are harder to assess, policymakers who may be subject to political pressures may pay insufficient attention to them.

In summary, we are not good at predicting the future of technology, especially when markets are subject to rapid change. Precisely because the mobile handset market is so dynamic, regulators should err on the side of doing less. If a dominant handset emerges that is effectively sealed off by virtue of an exclusive contract, we believe that an *ex post* investigation of this matter by the Commission or the antitrust authorities could swiftly curb any abuse. In the meantime, the availability of exclusive agreements between wireless carriers and handset manufacturers should make it more likely that the next big thing in mobile handsets emerges sooner rather than later.

LAWLESS SURVEILLANCE,
WARRANTLESS RATIONALES*

CINDY COHN**

In the four years since it was first revealed, the United States National Security Agency's warrantless domestic surveillance programs have been the subject of front page news stories,[1] multiple books,[2] dramatic hospital room confrontations,[3] and a heated Congressional battle culminating in an unprecedented law allowing the Attorney General to grant legal immunity to telecommunications companies for behavior they never admitted doing yet simultaneously claimed was lawful.[4] What it hasn't been subject to is a formal adjudication of whether this plainly ongoing activity is legal or constitutional.

Both former NSA Director Michael Hayden and former Justice Department attorney John Yoo took to the editorial pages of major

---

1. *See, e.g.*, Leslie Cauley, *NSA Has Massive Database of Americans' Phone Calls*, USA TODAY, May 11, 2006, at 1A; Eric Lichtblau & James Risen, *Bush Lets U.S. Spy on Callers Without Courts*, N.Y. TIMES, Dec. 16, 2005, at A1; Eric Lichtblau & James Risen, *Spy Agency Mined Vast Data Trove, Officials Report*, N.Y. TIMES, Dec. 24, 2005, at A1; Joseph Menn & Josh Meyer, *U.S. Spying is Much Wider, Some Suspect*, L.A. TIMES, Dec. 25, 2005, at A1.

2. *See, e.g.*, BARTON GELLMAN, ANGLER: THE CHENEY VICE PRESIDENCY (2008); JACK L. GOLDSMITH, THE TERROR PRESIDENCY: LAW AND JUDGMENT INSIDE THE BUSH ADMINISTRATION (2007); ERIC LICHTBLAU, BUSH'S LAW: THE REMAKING OF AMERICAN JUSTICE (2008); JAMES RISEN, STATE OF WAR: THE SECRET HISTORY OF THE CIA AND THE BUSH ADMINISTRATION (2006).

3. *See* Dan Eggen & Paul Kane, *Gonzales Hospital Episode Detailed: Ailing Ashcroft Pressured on Spy Program, Former Deputy Says*, WASH. POST, May 16, 2007, at A01; *see also* OFFICES OF THE INSPECTORS GENERAL, UNCLASSIFIED REPORT ON THE PRESIDENT'S SURVEILLANCE PROGRAM 24-26 (2009), *available at* http://www.fas.org/irp/eprint/psp.pdf.

4. *See* Foreign Intelligence Surveillance Act of 1978 Amendments Act of 2008, 50 U.S.C. § 1885a (2008).

national newspapers in the summer of 2009 to defend the still-shadowy set of programs that spy on Americans in America without any probable cause or warrant.[5] This campaign to sway public opinion continues, despite the ongoing revelations of the government's activity, because neither the past Bush officials nor the current Obama administration officials dare to defend the wholesale surveillance of millions of Americans on the merits in a court of law. Meanwhile, a new court ruling places judicial review of the spying even further out of reach.[6]

While the exact details are unknown, credible evidence indicates that billions of everyday communications of ordinary Americans are swept up by government computers and run through data-mining or other technical processes, likely culminating in human review of computer-selected communications.[7] That means that even the most personal and private of our electronic communications—between doctors and patients, between husbands and wives, or between children and parents—are subject to review by computer algorithms programmed by government bureaucrats, with some unknown portion reviewed by the bureaucrats themselves.

---

5. *See* Michael Hayden, *Warrantless Criticism*, N.Y. TIMES, July 26, 2009, at A21; John Yoo, *Why We Endorsed Warrantless Wiretaps*, WALL ST. J., July 16, 2009, at A13.

6. *See* Jewel v. NSA, No. C 06-1791, 2010 WL 235075 (N.D. Cal. Jan. 21, 2010), *appeal docketed*, No. C-08-4373 (9th Cir. Mar. 19, 2010).

7. *See* Declaration of Mark Klein in Support of Plaintiffs' Motion for Preliminary Injunction, Hepting v. AT&T, 439 F. Supp. 2d 974 (N.D. Cal. 2006), *available at* http://www.eff.org/files/filenode/att/Mark%20Klein%20Unredacted%20Decl-Including%20Exhibits.PDF (declaration of AT&T whistleblower describing massive NSA spying operation in AT&T San Francisco facility); Declaration of J. Scott Marcus in Support of Plaintiffs' Motion for Preliminary Injunction, *Hepting*, 439 F. Supp. 2d 974, *available at* http://www.eff.org/files/filenode/att/Marcus%20Declaration%20Including%20Exhibits.pdf (expert declaration reviewing whistleblower evidence and concluding it is consistent with a nationwide network of government surveillance hubs attached to key telecommunications switches); *see also*, *e.g.*, Barton Gellman, et al., *Surveillance Net Yields Few Suspects*, WASH. POST, Feb. 5, 2006, http://www.washingtonpost.com/wp-dyn/content/article/2006/02/04/AR2006020401373.html ("Surveillance takes place in several stages . . . the earliest by machine . . . . Successive stages of filtering grow more intrusive as artificial intelligence systems rank voice and data traffic in order of likeliest interest to human analysts . . . . [T]his kind of filtering intrudes into content, and machines 'listen' to more Americans than humans do."); Shane Harris & Tim Naftali, *Tinker, Tailor, Miner, Spy: Why the NSA's Snooping is Unprecedented in Scale and Scope*, SLATE, Jan. 3, 2006, http://www.slate.com/id/2133564/ ("[Telecommunications] companies have granted the NSA access to their all-important switches, the hubs through which colossal volumes of voice calls and data transmissions move every second . . . . [T]he NSA appears to be vacuuming up all data, generally without a particular phone line, name, or e-mail address as a target."); Lichtblau & Risen, *supra* note 1 (describing how the NSA had obtained "backdoor access to streams of domestic and international communication" via arrangements with "some of the nation's largest telecommunications companies to gain access to [telecommunications] switches," and describing the NSA program as a "large data-mining operation" in which NSA personnel comb through large volumes of phone and Internet traffic in search of patterns that might point to persons of interest).

The scale of the surveillance seems overwhelming, almost impossible. Yet the NSA apparently thinks it can do it. The agency is building a million square foot data storage facility at a cost of $2 billion in Utah and another large facility in San Antonio.[8] Noted author and NSA-watcher James Bamford notes that the NSA is planning to have gathered Yottabytes of data, or 1,000,000,000,000,000,000,000,000 pages of text, by 2015.[9] According to Bamford, the new facilities in Utah and Texas will be used "[t]o house trillions of phone calls, email messages and data trails: Web searches, parking receipts, bookstore visits, and other digital 'pocket litter.'"[10] This massive collection continues despite increasing indications that such data mining is "[n]ot well suited to the terrorist discovery problem."[11]

It's a remarkable turn of events, this shift from the traditional limitations on search and seizure to the wholesale scooping up and storing of our communications, our communications records, and indeed our entire digital lives. The United States was founded on the rejection of such wholesale collection of citizen communications and papers. In the late 1700s, "general warrants" were pieces of paper that gave the Executive (then the King) power to search colonial Americans without cause.[12] These general warrants were routinely used by British customs inspectors to search and seize papers in colonial homes in search of evidence of smuggling.[13] Indeed, John Adams noted that "the child Independence was born" when Boston merchants represented by James Otis unsuccessfully sued to stop these unchecked powers.[14] The Fourth Amendment was adopted in part to stop these "hated writs"[15] and to make sure that searches of the papers of Americans required an individualized, probable cause showing to a court.[16]

---

8. James Bamford, *Who's in Big Brother's Database?*, 56 N.Y. REV. OF BOOKS 17 (2009) (reviewing MATTHEW M. AID, THE SECRET SENTRY: THE UNTOLD HISTORY OF THE NATIONAL SECURITY AGENCY (2009) (citing MITRE CORP., DATA ANALYSIS CHALLENGES 13 (2008)).

9. Bamford notes that numbers greater than a Yottabyte have yet to be named. *Id.*

10. *Id.*

11. Jeff Jonas & Jim Harper, *Effective Counterterrorism and the Limited Role of Predictive Data Mining*, CATO INST. POL'Y ANALYSIS, Dec. 2006, at 1–2; *see also* WILLIAM J. PERRY ET AL., PROTECTING INDIVIDUAL PRIVACY IN THE STRUGGLE AGAINST TERRORISTS: A FRAMEWORK FOR PROGRAM ASSESSMENT (2008) (finding that data mining is not very helpful for counterterrorism).

12. Boyd v. United States, 116 U.S. 616, 625 (1886).

13. Payton v. New York, 445 U.S. 573, 608 (1980); Stanford v. Texas, 379 U.S. 476, 484 (1965); United States v. Lefkowitz, 285 U.S. 452, 466 (1932).

14. Founders of America, Otis Was a Flame of Fire, http://www.foundersofamerica.org/jotis.html (last visited Jan. 24, 2010).

15. *Stanford*, 379 U.S. at 481.

16. *Id.*; *see also generally* Thomas Y. Davies, *Recovering the Original Fourth Amendment*, 98 MICH. L. REV. 547 (1999) (exhaustively surveying history of Fourth Amendment and concluding that Framers' primary intent was to condemn general warrants).

The wholesale collection of American "papers" as part of the warrantless surveillance programs then returns us to the policies of King George III—only with a digital boost. The programs collect our emails, phone calls, Internet searches, website visits, Facebook posts, and other Internet data and subject them to computer review to pick out what will be reviewed by human analysts. This first step can lead to even more intrusive review by faceless government computers and bureaucrats when the computer programs written by the bureaucrats determine that our communications or communications patterns merit further scrutiny.[17]

So how is this digital return to general warrants being defended outside the courts? Both Yoo and Hayden draw from a similar bag of tricks. First, they claim that there was a "gap" between our domestic security and our foreign intelligence surveillance.[18] What they appear to be referencing is the fact that there are more barriers to NSA surveillance inside of the United States than outside of the United States. But this is because those outside of the United States do not enjoy the protections of the U.S. Constitution and our longstanding privacy laws and so can be freely surveilled. It has long been known, including through a report by the European Parliament, that the NSA has set up "listening stations" outside of the United States to sweep up foreign-to-foreign communications on a wholesale basis.[19] So what Yoo and Hayden are calling a "gap" appears to arise from the fact that longstanding constitutional and statutory privacy protections prevent the NSA from engaging in the same kind of wholesale listening in on Americans in America that the agency routinely engages in abroad. Yet far from being a problem or a "gap," these are some of the crucial limitations on the power of government that safeguard our freedoms.[20]

Second, Yoo and Hayden cite briefings given to a few, select members of Congress as demonstrating that the surveillance programs

---

17. *See supra* notes 1 & 7.

18. Hayden, *supra* note 5; *see* Yoo, *supra* note 5.

19. STEVE WRIGHT, EUROPEAN PARLIAMENT, DIRECTORATE GENERAL FOR RESEARCH, AN APPRAISAL OF TECHNOLOGIES OF POLITICAL CONTROL (1998), *available at* http://cryptome.org/stoa-atpc.htm (European Parliament report describing "a global surveillance system that stretches around the world to form a targeting system on all of the key Intelsat satellites used to convey most of the world's satellite phone calls, internet, email, faxes and telexes," called Echelon); Jason Leopold, *Revisiting Echelon: The NSA's Clandestine Data Mining Program*, THE PUB. REC., Jul. 15, 2009, http://pubrecord.org/nation/2290/revisiting-echelon-nsas/ (describing relationship between NSA program and Echelon).

20. Another theory for the "gap" reference is that the NSA wishes to be able to intercept from inside the United States foreign to foreign or one-end foreign communications that transit through the United States. But the NSA has never explained why those communications, which by definition travel *outside* the United States for some part of their journeys, could not be intercepted at its foreign listening stations.

are not to be feared.[21] Yet neither the full Congress, nor even the full intelligence committees were informed, and those who participated have long complained that the briefings were often incomplete and even possibly misleading.[22]

Third, Yoo and Hayden defend the warrantless surveillance by claiming that it was approved by the hand-picked Bush administration political appointee attorneys.[23] But as the Constitution's careful separation of powers requirements attest, the Executive branch simply cannot be relied upon to police itself, nor should its own secret, internal justifications for its behavior replace formal, external judicial review. Political appointees answer to the President; and the Fourth Amendment's requirement that a court, not the Executive, review and approve surveillance requests is no accident. As the Supreme Court has noted, the Constitution protects us by "divid[ing] power . . . among branches of government precisely so that we may resist the temptation to concentrate power in one location as an expedient solution to the crisis of the day."[24]

Moreover, even on its own terms, the claim that Executive branch officials signed off on the warrantless wiretapping program is weak. Jack Goldsmith, one of those hand-picked Bush administration lawyers, pronounced the wiretapping program "the biggest legal mess" he had seen in his life.[25]

Aside from the attempted justifications of Yoo and Hayden, the Bush Administration's central view was that, when taking steps that it deemed necessary for national security, the Executive branch was somehow above the niceties of the Constitution.[26] As a result, it is unsurprising that they believed the President could ignore the

---

21. Hayden, *supra* note 5; *see* JOHN YOO, WAR BY OTHER MEANS: AN INSIDER'S ACCOUNT OF THE WAR ON TERROR 115–18 (2006).

22. *See* OFFICES OF THE INSPECTORS GENERAL, *supra* note 3, at 23 n. 16 (describing how U.S. Senators and Representatives dispute the Administration's characterization of Congressional briefings on the NSA program); *see also* Letter from Harry Reid, Democratic Leader, U.S. Senate, John D. Rockefeller IV, Vice Chairman of the Select Comm. on Intelligence, U.S. Senate, & Patrick Leahy, Ranking Democrat of the Comm. on the Judiciary, U.S. Senate to George W. Bush, U.S. President (Dec. 20, 2005), http://democrats.senate.gov/newsroom/record.cfm?id=250189 (letter from Democratic leaders in Senate to President demanding information on NSA program and noting that "public statements by several of the handful of Members of Congress who were provided a briefing on this program indicate that insufficient information was provided to them under ground rules that did not enable Congress to conduct satisfactory oversight.").

23. Hayden, *supra* note 5; Yoo, *supra* note 5.

24. Printz v. United States, 521 U.S. 898, 933 (1997) (quoting New York v. United States, 505 U.S. 144, 187 (1992)).

25. Dan Eggen, *White House Secrecy On Wiretaps Described*, WASH. POST, Oct. 3, 2007, http://www.washingtonpost.com/wp-dyn/content/article/2007/10/02/AR2007100201083.html.

26. *See* Yoo, *supra* note 5.

constitutional and statutory provisions that had long prevented the NSA from engaging in wholesale spying on Americans on American soil. What's clear now, and deeply distressing, is President Obama's embrace of this radical view, rejecting the bedrock principle that the Constitution and the rule of law place limits on Executive power.[27] Despite running on promises to return the country to the proper constitutional balance, President Obama's Justice Department has been pulling out all the stops to block the courts from reviewing the domestic surveillance programs while giving no indication that the surveillance itself has ceased.[28]

Unfortunately, the District Court faced with these arguments ducked them altogether, and instead blazed its own, equally dangerous path.[29] The Court dismissed the cases on the incorrect conclusion that, because so many individuals were impacted by the widespread surveillance, the plaintiffs had no standing.[30] This argument, which was not raised by either party in the case, mischaracterizes the claims as presenting a "generalized grievance" akin to a mere policy dispute, rather than "particularized injury" suffered by the plaintiffs necessary for standing. Aside from ignoring the actual concrete harm to each individual whose conversations and emails were illegally intercepted and reviewed or processed, this holding would have the courts blind themselves to statutory and constitutional violations on the grounds that they impact too many people. Such a finding, if upheld on appeal, would grant the government the ability to conduct whatever surveillance it likes, so long as it violates the privacy of many, many Americans rather than just a few. Even if reversed on appeal, the ruling threatens to place actual judicial consideration of the merits of the surveillance years away.

Thus, the core constitutional crisis caused by the domestic surveillance programs remains. While we can expect to see more attempts to shape public opinion by powerful current and former Executive branch figures, no amount of op-ed window dressing can hide the central fact that the domestic surveillance programs are a digital version of general warrants and a return to the "hated writs" of the Founders. The failure of the Executive to submit these programs to the judiciary for a true constitutional and legal review speaks far louder than

---

27. *See* Press Release, Electronic Frontier Foundation, Obama Administration Embraces Bush Position on Warrantless Wiretapping and Secrecy: Says Court Must Dismiss *Jewel v. NSA* to Protect 'State Secrets' (Apr. 6, 2009), http://www.eff.org/press/archives/2009/04/05; *see also* Zachary Roth, *Expert Consensus: Obama Mimics Bush on State Secrets*, TPMMUCKRACKER, Apr. 9, 2009, http://tpmmuckracker.talkingpointsmemo.com/2009/04/expert_consensus_obama_aping_bush_on_state_secrets.php.

28. Opinion, *Obama Channels Cheney: Obama Adopts Bush View on the Powers of the Presidency*, WALL ST. J., Mar. 7, 2009, at A10.

29. *See* Jewel v. NSA, No. C 06-1791, 2010 WL 235075 at *2–3 (N.D. Cal. Jan. 21, 2010)), *appeal docketed*, No. C-08-4373 (9th Cir. Mar. 19, 2010).

30. *Id.*

the self-serving justifications of former officials, even when they are published in our nation's leading newspapers.

CAUGHT IN THE CLOUD: PRIVACY, ENCRYPTION, AND GOVERNMENT BACK DOORS IN THE WEB 2.0 ERA*

CHRISTOPHER SOGHOIAN**

INTRODUCTION

  Over the last few years, consumers, corporations and governments have rushed to move their data to "the cloud,"[1] adopting web-based

---

  1. "Cloud Computing Services" involve "a software and server framework (usually based on virtualization)" that uses "many servers for a single software-as-a-service style application or to host many such applications on a few servers." PETER MELL & TIM GRANCE, NAT'L INST. OF STANDARDS AND TECH., PERSPECTIVES ON CLOUD COMPUTING AND STANDARDS 3 (2008), http://csrc.nist.gov/groups/SMA/ispab/documents/minutes/2008-

applications and storage solutions provided by companies that include Amazon, Google, Microsoft and Yahoo. Over 69% of Americans now use webmail services, store data online, or otherwise use software programs such as word processing applications whose functionality is in the cloud.[2] This trend is only going to continue, with industry analysts predicting that cloud computing related revenues will grow to somewhere between $40 and $160 billion over the next few years.[3]

Cloud computing services provide consumers with vast amounts of cheap, redundant storage and allow them to instantly access their data from a web-connected computer anywhere in the world. Unfortunately the shift to cloud computing needlessly exposes users to privacy invasion and fraud by hackers. Cloud-based services also leave end users vulnerable to significant invasions of privacy by the government, resulting in the evisceration of traditional Fourth Amendment protections of a person's private files and documents. These very real risks associated with the cloud computing model are not communicated to consumers, who are thus unable to make an informed decision when evaluating cloud-based services.

This article will argue that the increased risks that users face from hackers are primarily a result of cost-motivated design tradeoffs on the part of the cloud providers, who have repeatedly opted to forgo strong security solutions. These vulnerabilities can easily be addressed through the adoption of industry standard encryption technologies, which are already in widespread use by online banks and retailers. Cloud providers should enable these encryption technologies, and more importantly, turn them on by default. This article will argue that the failure of cloud computing companies to provide these technologies is a strong indicator of a market failure. Fixing this may require user education in order to stimulate demand for safer solutions, or perhaps even the threat of government regulation.

12/cloud-computing-standards_ISPAB-Dec2008_P-Mell.pdf.

2. JOHN B. HORRIGAN, PEW RESEARCH CTR., CLOUD COMPUTING GAINS IN CURRENCY: ONLINE AMERICANS INCREASINGLY ACCESS DATA AND APPLICATIONS STORED IN CYBERSPACE (2008), http://pewresearch.org/pubs/948/cloud-computing-gains-in-currency.

3. Geoffrey A. Fowler & Ben Worthen, *The Internet Industry Is on a Cloud—Whatever That May Mean*, WALL ST. J., Mar. 26, 2009, http://online.wsj.com/article/SB123802623665542725.html ("Research firm IDC predicts cloud computing will reach $42 billion in 2012. (It defines the segment as 'an emerging IT development, deployment and delivery model, *enabling* real-time delivery of products, services and solutions over the Internet.') Gartner Inc. projects world-wide cloud-services revenue will rise 21.3% in 2009 to $56.3 billion. (Gartner calls it 'a style of computing where scalable and elastic IT-enabled capabilities are provided 'as a service' to external customers using Internet technologies'; its forecast includes online advertising.) Merrill Lynch last year estimated cloud-computing revenues would reach $160 billion in 2011. (Merrill declined to provide a copy of its report.)").

With regard to the intrusion upon user privacy performed by government agencies, fault for this privacy harm does not lie with the service providers, but the inherently coercive powers which the government can flex at will. The third party doctrine, through which government agents can often obtain users' private files from service providers with a mere subpoena,[4] is frequently criticized by privacy scholars. However, this article will argue that this doctrine becomes moot once encryption is in use and companies no longer have access to their customers' private data. The real threat to privacy lies with the fact that corporations can and have repeatedly been forced to modify their own products in ways that harm end user privacy, such as by circumventing encryption.

Cloud computing providers are caught in an unenviable situation—since there is little they can do to guarantee their customers protection from the government's watchful gaze.[5] On one hand, public interest groups and activists will criticize these companies for failing to protect their customers' privacy,[6] while on the other, the government can quietly force them to circumvent any privacy enhancing technologies that they do deploy.

This article is organized as follows. Part I introduces the concepts behind cloud computing and the technical shifts that have made it possible for many users to unknowingly switch to cloud solutions. Part II will explore privacy and security related threats which users face from hackers, and the failure of service providers to protect users from them. Part III focuses on the trickier issue of intrusions by the government, and the ultimate inability of service providers to protect their users from these threats. Part IV concludes with policy recommendations, both legal and technical.

I.   CLOUD COMPUTING

One of the defining characteristics of the personal computing paradigm is that users maintain physical control over their files and data. In fact, it was the departure from the mainframe computing model, in which users merely operated on slices of a central server's time and resources that marked the beginning of the personal computing era.

---

4. The government has long argued that an email is no longer in "electronic storage" once it has been read by the recipient, and thus it can be obtained using a subpoena with delayed notice. *See* 18 U.S.C. § 2703(b) (2009).

5. *See generally* Albert Gidari Jr., Keynote Address, *Companies Caught in the Middle*, 41 U.S.F. L. REV. 535 (2007).

6. *See, e.g.*, Complaint and Request for Injunction by Elec. Privacy Info. Ctr., Google, Inc. and Cloud Computing Services (Mar. 17, 2009), *available at* http://epic.org/privacy/cloudcomputing/google/ftc031709.pdf.

Personal computing users are able to make use of word processing programs such as Microsoft's Word in order to write memos, reports, and letters; Microsoft's Excel and Intuit's Quicken in order to manage their finances and balance their books; and Apple's iPhoto, Adobe's Photoshop and other programs to organize, edit and catalog their digital photo collections.

This computing model has become firmly ingrained in the consciousness of consumers and, as such, we have become used to our documents, music, and photographs residing on our own personal devices as well as relying on our own computing resources to process and display our data. If we run out of storage space, or a task takes far too long, the solution is to upgrade our own computer—and likewise, if our computer suffers a hardware failure or is lost or stolen, we often lose our files.

In recent years, the computing industry has turned away from this personal computing model, and shifted towards online services, commonly described as "software as a service" or "cloud computing." This paradigm, in which the user's web browser acts as a "thin client" and remote servers perform the majority of the data processing is rapidly being adopted by both consumers and businesses. As such, this model already plays a key role in the United States economy.[7]

The first application to move to the cloud was electronic mail—perhaps due to the fact that the use of the service already required Internet access. However, in time, other applications soon moved online. Google's Apps suite is the market leader in this area,[8] providing word processing, spreadsheets and presentation software functionality via a web browser. Microsoft, Adobe and Intuit have been quick to follow by releasing web-based versions of their Office,[9] Photoshop,[10] and Quicken products.[11]

Cloud computing enables a whole collection of computing resources such as applications, storage space and processing power to be delivered

---

7. Roger Smith, *IDC Says IT Cloud Services To Reach $42 Billion By 2012*, INFO. WEEK, Oct. 20, 2008, http://www.informationweek.com/blog/main/archives/2008/10/idc_says_it_clo.html ("Based on a survey of IT executives, CIOs, and other business leaders, IDC said this week it expects spending on IT cloud services to grow almost threefold in the next five years, reaching $42 billion by 2012.").

8. Posting of Richard MacManus to ReadWriteWeb, http://www.readwriteweb.com/archives/google_docs_web_office_leader.php (Dec. 7, 2007, 12:23) ("This shows that Google's word processing and spreadsheet products have a noticeable lead over what may be its nearest rival, Zoho.").

9. *See generally* Microsoft Office Live, http://www.officelive.com (last visited Oct. 31, 2009).

10. *See generally* Photoshop Express, https://www.photoshop.com (last visited Oct. 31, 2009).

11. *See generally* Quicken Online, http://quicken.intuit.com (last visited Oct. 31, 2009).

via the Internet. Hundreds of thousands of computers, located in data centers around the world handle the processing and storage of data for millions of individual users. The cloud computing model is deemed by many commentators to be the future of computing.[12]

Many firms wishing to draw attention to their own products have adopted and borrowed terms associated with "cloud computing," such as "Web 2.0," "software as a service" and other fashionable buzzwords. As a result, there is little agreement on the actual definition of "cloud computing."[13] For the purpose of this article, the term "cloud computing" will be used to apply to software offerings where the application is executed in a web browser, via software code that is downloaded (as needed) from a remote server that also stores users' files.[14]

A.   *Benefits of Cloud Computing for Service Providers*

The cloud computing model brings a number of important benefits to service providers: reduced piracy, the ease of denying access to troublesome users, protection of sensitive technology and intellectual property, the ability to serve carefully targeted advertising to customers, and increased security.

The problem of unauthorized copying is almost non-existent when software is delivered via the web. This is because much of the computation occurs on the software provider's own servers. Since this code is never provided to the user, it cannot be copied. Thus, while thousands of users illegally share copies of Microsoft Office and Adobe Photoshop via online peer to peer filesharing services,[15] the code powering Google's Docs and Adobe's Photoshop Express cloud-based products remains under tight wraps. Users are free to sign up for and use these tools, but they (as well as the firms' competitors) are unable to host the tools on their own servers.

Another benefit of cloud computing is the ability to easily terminate access to particular users. Software providers are able to maintain control

---

12. Daniel Lyons, *Today's Forecast: Cloudy*, NEWSWEEK, Nov. 1, 2008, http://www.newsweek.com/id/166818 ("Pretty much everyone in the tech industry agrees it's the future—including Microsoft, which last week devoted much of its annual conference for developers to a rollout of new cloud technologies and a pep talk about why customers should jump aboard.").

13. Fowler & Worthen, *supra* note 3 ("While almost everybody in the tech industry seems to have a cloud-themed project, few agree on the term's definition.").

14. While pure remote storage or computing services such as Amazon's S3 are commonly described as cloud services, they are beyond the scope of this article.

15. *See, e.g.*, The Pirate Bay, Microsoft Office 2007 Complete Version + CD Keys, http://thepiratebay.org/torrent/4183909/Microsoft_Office_2007_Complete_Version___CD_Keys (May 12, 2008); The Pirate Bay, Adobe Photoshop CS3 Extended + Crack, http://thepiratebay.org/torrent/3967056/Adobe_Photoshop__CS3__Extended___Crack (Jan. 8, 2008).

over access to their services, often via a unique account and password per customer. If a company wishes to cut off access to a particular customer, this can be done by simply suspending an individual account.

Furthermore, cloud computing makes it far easier to protect trade secrets. For example, companies like Adobe whose flagship Photoshop product contains proprietary image-altering algorithms may wish to keep such technology secret from their competition. Whereas previously, a competitor could purchase a copy of Photoshop, run it on a desktop computer, and reverse engineer the product's key algorithms.[16] Under the cloud computing paradigm, the user's web browser submits an image to Adobe's servers, which apply the algorithm, and then return the modified image. Since the secret algorithm is never executed on the user's computer, reverse engineering is made exceedingly difficult.

Cloud services also allow software vendors to easily embed advertisements into their offerings, and to use sophisticated data mining algorithms to display advertisements related to the users' private data held within the cloud.[17]

Finally, cloud computing providers can be certain that end users are always running the most up-to-date version of their software, a problem that has plagued the traditional PC industry. Cloud vendors can apply the fix to their own servers, without requiring that users choose to update it themselves. This ability to roll out instant updates across an entire product line reduces tech support costs, and helps to protect the company's reputation from being damaged by claims of shoddy workmanship or poor security practices.

B. Benefits of Cloud Computing for End-Users

For the consumers and businesses that have switched to cloud-based services, there are a number of benefits including price, reliability, and accessibility, as well as the ease of access independent of a specific computer.

---

16. Reverse Engineering is generally defined as the process of "starting with the known product and working backward to divine the process which aided in its development or manufacture." Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 476 (1974). *See also* Pam Samuelson & Suzanne Scotchmer, *The Law and Economics of Reverse Engineering*, 111 YALE L.J. 1575 (2002).

17. *See* Posting of Peter Fleischer to Privacy . . . ?, http://peterfleischer.blogspot.com/ 2007/02/gmail-and-targeted-ads-is-that-right.html (Feb. 6, 2007, 12:15) ("All major free webmail services carry advertising, and most of it is irrelevant to the people who see it. Some services which compete with Gmail attempt to target theirs [sic] ads to users based on their demographic profile (e.g., gender, income level or family status). Google believes that showing relevant advertising offers more value to users than displaying random pop-ups or untargeted banner ads. In Gmail, users will see text ads and links to related pages that are relevant to the content of their messages."). *See also* Gmail Privacy Notice, http://mail.google.com/ mail/help/privacy.html (last visited Oct. 31, 2009).

Most cloud computing services are either free or significantly cheaper than more traditional desktop offerings.[18] Consumer oriented services are generally "free," in so far as users do not pay money for access, but instead submit to behavioral advertising and data mining of their activities, social networks and communications.[19] Commercial editions of cloud services often come at a direct financial cost, but one which is far less than comparable desktop software. Of course, Microsoft Office and Google Docs are not equal in features, but Google's product suite is often *good enough* for school work, as well as the simple word processing and spreadsheet tasks performed by many employees.[20]

Many of the cloud-based services include built-in revision control systems,[21] which enable a user to immediately access past versions of a document. Files are automatically backed up at regular intervals and stored on multiple servers around the country. As a result, hardware failure in the user's computer will not result in the loss of any data.[22] Furthermore, in the event that the user suffers a hardware failure, they merely need to open a web browser on a different computer, and can then continue editing their documents where they had previously left off.

Since the applications and user's files are stored online, they are accessible from anywhere in the world. A user can sit down at a new computer (even miles from their home) and instantly access a copy of her documents. Furthermore, since most of the heavy duty processing is performed by remote servers and not by the user's computer, cloud computing extends the usable life of older computer hardware as well as providing data access to less powerful devices such as mobile phones.

---

18. *See, e.g.*, Tom Austin et al., *Google Targets Enterprise E-Mail and Collaboration Tools*, GARTNER, Feb. 27, 2007, *available at* http://www.gartner.com/resources/146700/146730/google_targets_enterprise_em_146730.pdf ("[Google] Premier Edition's yearly price of $50 per user appears to be less than half the $122 we believe enterprises are currently spending for e-mail with much more stringent storage limitations.").

19. *See generally* Grant Yang, *Stop the Abuse of Gmail!*, 2005 DUKE L. & TECH. REV. 14 (2005).

20. Posting of Harry McCracken to PC World's TechLog, http://blogs.pcworld.com/techlog/archives/003783.html (Feb. 22, 2007, 17:59 PT) ("So who might want Google Apps in its current form? Well, there are certainly scads of workers in the world who really only need basic tools.").

21. Walter F. Tichy, *RCS—A System for Version Control*, 15(7) SOFTWARE: PRAC. & EXPERIENCE 637 (1985) ("Revision Control System (RCS): A version control system that automates the storing, retrieval, logging, identification, and merging of revisions. RCS is useful for text that is revised frequently, for example programs, documentation, graphics, papers, and form letters.").

22. Google Docs Tour, http://www.google.com/google-d-s/tour3.html (last visited Oct. 31, 2009) ("Safely store your work. Online storage and auto-save mean you needn't fear local hard drive failures or power outages.").

C.   Cloud Creep and the Rise of Cloud Services as the Pre-installed Default

While some users may choose to switch to cloud-based services, others are not as fortunate and often this decision is made without their knowledge.

Due to the significant reductions in licensing and support costs, many corporate and government IT managers are making the switch. Compared to the $500 list price for the full version of Microsoft Office Professional,[23] Google's $50-per-year price tag is a bargain—especially given that it includes telephone, e-mail and web support.[24] Corporate enterprise managers are able to re-brand the Google Apps products with their own companies' logos. The services also plug directly into existing IT infrastructure. For example, corporate Google Mail customers can configure the service to use their own Internet domain names, making the switch oblivious to outsiders and customers who might otherwise recognize the telltale 'gmail.com' email addresses.

Incoming students at thousands of universities are now issued Google accounts on their first day, enabling them to write term papers and access their official school email inboxes that are hosted on Google's servers.[25] University students are not alone in this switch—before he was tapped to become the Federal Chief Information Officer, Vivek Kundra switched 38,000 Washington DC employees from Microsoft Office to Google Docs.[26] Google claims that nearly 2 million businesses use

---

23. Microsoft Online Store, http://office.microsoft.com/en-us/suites/FX102434861033. aspx (last visited Oct. 31, 2009).

24. Google, About Phone Support, http://www.google.com/support/a/bin/answer.py? hl=en&answer=65260 (last visited Oct. 31, 2009) ("Google Apps Premier Edition, Education Edition, and Authorized Reseller customers have access to a phone line to report a service unusable issue.").

25. Posting of Miriam Schneider & Jason Cook to Official Google Blog, Five million students going back to school are "going Google," http://googleblog.blogspot.com/ 2009/09/five-million-students-going-back-to.html (Sept. 8, 2009) ("As of this fall, over five million students at thousands of schools in more than 145 countries have 'gone Google' and are actively using Google Apps Education Edition on campus."); David Sarno, *Los Angeles City Hall becomes Tech Giants' Battlefield: Microsoft and Google are Vying for a $7.25-million Contract to Replace an Outdated E-mail System*, L.A. TIMES, Sept. 28, 2009, at A1, *available at* http://www.latimes.com/business/la-fi-email-wars28-2009sep28,0,3711416.story ("Thousands of colleges, including USC and Notre Dame, and nearly 2 million businesses have adopted Google Apps, the company says. Most schools and small businesses get Google Apps for free, but the company has also converted some heavy corporate hitters into paying customers, including biotech company Genentech, electronics maker Motorola and chip maker Fairchild Semiconductor.").

26. Molly Peterson, *Google Rewires Washington in Challenge to Microsoft*, BLOOMBERG, Oct. 10, 2008, http://www.bloomberg.com/apps/news?pid=20601109&sid=a8q7UONag9nA ("The 34-year-old city technology chief signed a contract worth almost $500,000 a year in June for all 38,000 municipal employees to use Google's e-mail, spreadsheet and word-processing programs, giving them an Internet-based alternative to Microsoft Corp.'s Office

Google Apps, with thousands more signing up each day.[27]

While some students and employees realize that they are using cloud-based services, many others may not, particularly when the services have been rebranded and heavily stripped of Google's logos.[28]

At the consumer level, cloud services are also making inroads through the use of pre-installed desktop icons on new PCs, particularly in low end devices. Over the past year, sub $400 "netbook" portable computers have taken the computing industry by storm. The manufacturers of these devices operate with extremely low profit margins, which they hope to make up in volume.[29] As a result, the netbook makers are trying many possible ways to lower their own costs. One of the main ways they have done this is to abandon Microsoft's operating system and Office suite. In addition to pre-installing these computers with the Linux operating system, several manufacturers also ship their netbook products with prominent icons for Google's Docs and Spreadsheets tools.[30]

In addition to the general industry trends that are pushing many towards cloud-based services, new technologies make such transitions less obvious to end-users. Two of these are now highlighted: single site browsers, and offline content.

D.   Single Site Browsers

The shift to cloud computing moved much of a user's normal activity to the web browser. While this certainly lowers many barriers to

---

software, installed on computers. Accountants, teachers and firefighters use Google to set budgets, track truancy rates and map emergency routes.").

27. *See* Sarno, *supra* note 25.

28. Users of the Google Apps suite see a small "powered by Google" logo in the bottom of each page. All other branding is that of the company subscribing to the service.

29.   For example, a commentator reported that:

Acer expects to sell 12-13 million netbooks in 2009, and ASUS expects to sell roughly 7 million netbooks . . . .

. . . .

The total would put netbook shipments over 20 million in 2009 from just the two companies, some 50% more than 2008's 14 million sold. If Acer and ASUS retain a percentage of their total market share from Q3 2008, shipments of netbooks in 2009 could top 30 million units, doubling 2008's total . . . .

Ari Allyn-Feuer, *ASUS, Acer: Strong Netbook Sales in '09. Is 30M Possible?*, ARS TECHNICA, Jan. 7, 2009, http://arstechnica.com/hardware/news/2009/01/asus-acer-strong-netbook-sales-in-09-is-30m-possible.ars.

30. Steven J. Vaughan-Nichols, *Linux-powered Asus Eee PC Mini-laptop Arrives*, DESKTOPLINUX, Nov. 1, 2007, http://www.desktoplinux.com/news/NS5557994061.html ("The system's applications include such usual Linux favorites as OpenOffice, Firefox, and Thunderbird. To make life easier still, some pages include links to useful sites such as Google Docs.") (describing the Xandros Linux distribution pre-installed by default on many ASUS EEE netbook computers).

user adoption, such as negating the need to download and install specific applications, this transition also raises a number of security and usability issues. For example, web browsers generally store all of a user's saved passwords, browsing history and other sensitive information in a single place. As such, it is possible for malicious websites to exploit browser vulnerabilities in order to steal information associated with other existing or previous browsing sessions—such as a logged-in email account or online banking session.[31] It is for this reason that some security experts recommend that consumers use one web browser for general surfing, and another for more sensitive tasks, such as online banking.[32]

Seeking to mitigate these risks, web browser vendors have released single site browser technology, the most advanced of which is Mozilla's Prism tool for its Firefox platform.[33] Prism and the other single site browsers allow a user to "split web applications out of the browser and run them directly on the desktop."[34] A Prism user can create a dedicated icon on their desktop for any website they regularly visit. When that icon is clicked, a dedicated browser window will open taking them to the pre-assigned website. Each Prism instance maintains its own profile for browser preferences and user data, and each Prism application also runs as its own system process. The end result is that a malicious website accessed from one Prism session (or a Firefox browser window) is unable

---

31. *See, e.g.*, Liam Tung, *Gmail Cookie Vulnerability Exposes User's Privacy*, CNET NEWS, Sept. 27, 2007, http://news.cnet.com/Gmail-cookie-vulnerability-exposes-users-privacy/2100-1002_3-6210353.html. ("[A]ttackers could compromise a Gmail account—using a cross-site scripting vulnerability—if the victim is logged in and clicks on a malicious link."); Ryan Paul, *Serious Cross-Site Request Forgery Vulnerability Found in Gmail*, ARS TECHNICA, Sept. 27, 2007, http://arstechnica.com/software/news/2007/09/cross-site-request-forgery-vulnerability-found-in-gmail.ars ("Security researcher Petko Petkov has revealed a cross-site request forgery vulnerability in Gmail that makes it possible for a malicious web site to surreptitiously add a filter to a user's Gmail account that forwards e-mail to a third-party address."). Another source reported that:

> Researchers from Princeton University today revealed their discovery of four major Websites susceptible to the silent-but-deadly cross-site request forgery (CSRF) attack—including one on INGDirect.com's site that would let an attacker transfer money out of a victim's bank account.
>
> . . . .
>
> The CSRF bug they found on ING's site would have let an attacker move funds from the victim's account to another account the attacker opened in the user's name, unbeknownst to the user. Even using an SSL session wouldn't protect the user from such an attack.

Kelly Jackson Higgins, *CSRF Flaws Found on Major Websites*, DARK READING, Sept. 29, 2008, http://www.darkreading.com/security/app-security/showArticle.jhtml?articleID= 211201247.

32. *See generally* posting of Rich Mogull to Securosis, http://securosis.ehclients.com/blog/making-the-move-to-multiple-browsers, (June 3, 2008, 04:42).

33. *See generally* Mozilla Prism, http://labs.mozilla.com/projects/prism/ (last visited Oct. 31, 2009). *See also* Fluid, http://fluidapp.com/ (last visited Oct. 31, 2009).

34. *See* Introducing Prism, http://labs.mozilla.com/2007/10/prism/ (Oct. 24, 2007).

to access any of the private data associated with another Prism application.

In addition to these security benefits, Prism brings several changes to the user interface. By default, Prism applications do not show any of the browser's traditional branding. The website address of the current page is not displayed, there are no forward, back or refresh buttons, nor is there any way to see when the user is or isn't connecting via a secure, encrypted connection.[35]

While operating system vendors and corporate IT managers are already installing links to cloud-based services on user's desktops, Prism and other Single Site Browser technologies make this process even easier.[36] Particularly for end-users as yet unfamiliar with web-based word processing and office tools, Prism can make these sites seem like regular applications, and make it possible to ignore the fact that the services are Internet based at all.

E.   *Offline Content*

As applications first started to move into the cloud, one of the few obvious disadvantages was that users had to be connected to the Internet in order to access their documents and personal files. When on an airplane, or in a public place without wireless Internet access, users found themselves unable to access files that would have traditionally been just a few clicks away.

Google was the first major provider to try and address this issue through the release of its Gears browser add-on tool in 2007.[37] This software extension provides a standard application programming interface (API) that websites can use to enable offline data storage and access. Within months of the release, Google added offline support via

---

35. Mozilla explains these differences:

Personal computing is currently in a state of transition. While traditionally users have interacted mostly with desktop applications, more and more of them are using web applications. But the latter often fit awkwardly into the document-centric interface of web browsers. And they are surrounded with controls—like back and forward buttons and a location bar—that have nothing to do with interacting with the application itself.

Id.

36. Ryan Paul, *Hands-On with an Alpha of the Jolicloud Netbook Distro*, ARS TECHNICA, July 27, 2009, http://arstechnica.com/open-source/reviews/2009/07/hands-on-jolicloud-alpha-combines-ubuntu-and-mozilla-prism.ars ("Jolicloud is a custom Linux distribution that is designed specifically for netbook devices. It uses Mozilla's Prism Web runtime and Canonical's Ubuntu Netbook Remix (UNR) to deliver a Web-centric Linux environment that is easy to use.").

37. Press Release, Google, Google Launches Gears Open Source Project to Bring Offline Capabilities to Web Applications (May 31, 2007), http://www.google.com/intl/en/press/pressrel/gears_20070530.html.

Gears to its Reader, Docs, Spreadsheets and Gmail products.[38] Thus, with Gears installed, a Gmail user can have almost complete access to their inbox and draft new emails when away from an Internet connection. Once a connection is re-established, the browser automatically synchronizes with Google's servers, sending the stored messages and downloading those newly received.

While Google's Gears was the first offline web content API to be released, other companies such as Yahoo and Adobe have since released similar products.[39] In 2008, an open-standard for offline content was added to the next generation HTML5 specification, support for which was quickly adopted by practically all of the non-Microsoft web browsers.[40] Thus, the latest versions of Firefox and Apple's now include support for this technology,[41] enabling website designers to add offline data functionality to their sites without requiring the user to download and install any additional software.

38. *See generally* Jacqui Cheng, *Google Docs Pulls Head Out of the Cloud, Goes Offline*, ARS TECHNICA, Mar. 31, 2008, http://arstechnica.com/old/content/2008/03/google-docs-pulls-head-out-of-the-cloud-goes-offline.ars. *See also* David Chartier, *Gmail Finally Gets Offline Access—with Caveats*, ARS TECHNICA, Jan. 28, 2009, http://arstechnica.com/web/news/2009/01/gmail-finally-gets-offline-accesswith-caveats.ars.

39. Stephen Shankland, *Zimbra Desktop Gives Yahoo Mail Offline Access*, CNET NEWS, July 24, 2008, http://news.cnet.com/8301-1023_3-9998418-93.html ("The first real fruits of Yahoo's $350 million acquisition of Zimbra are becoming apparent with the release Thursday of the Yahoo Zimbra Desktop. The e-mail software, available as a free download for Windows and Mac, works when the user is offline, and it offers options for basic online word processing and spreadsheets, task management, and file storage."); John C. Bland II, *Taking Adobe AIR Applications Offline*, ADOBE LABS, Apr. 24, 2007, http://labs.adobe.com/wiki/index.php/AIR:Articles:Taking_Apollo_Applications_Offline ("One of the greatest abilities of AIR, in my opinion, is the ability to create an application to run online and offline. The application could allow the user to make changes to their account, content, etc. while not connected and sync the data online when the connection returns. The user will only love the application even more.").

40. Sean Michael Kerner, *Is The Web Ready For HTML 5?*, INTERNETNEWS, Apr. 16, 2007, http://www.internetnews.com/xSP/article.php/3672011 ("If Mozilla, Opera and Apple's Safari browser have their way, the HTML specification could be getting its first major point update in a decade. The three vendors have banded together in a proposal to the W3C for the HTML 5 specification, which includes Web Apps 1.0 and Web Forms 2.0 specifications and that it's also backwards compatible with HTML 4. . . . HTML is the foundation markup language on which the Web was and is built and was originally created by Tim Berners-Lee. The last major upgrade to HTML was in 1997 with the release of version 4.0.").

41. Posting of Brady Eidson to Surfin' Safari, http://webkit.org/blog/126/webkit-does-html5-client-side-database-storage (Oct. 19, 2007, 16:04) ("The current working spec for the HTML5 standard has a lot of exciting features we would eventually like to implement in WebKit. One feature we felt was exciting enough to tackle now even though the spec is still in flux is client-side database storage."); Offline Resources in Firefox, https://developer.mozilla.org/en/Offline_resources_in_Firefox (last visited Oct. 31, 2009) ("Firefox 3.5 supports the HTML 5 specification for offline caching of web applications' resources . . . .").

F.   Confusion

The mass deployment of cloud-based services, particularly when coupled with single site browser and offline content technology will likely lead to a significant risk of confusion for end users. As computer manufacturers, employers and universities deploy cloud-based tools on the desktop, many users may fail to realize that they are in fact using an Internet based service. This risk of confusion will likely increase when cloud-based applications lack any recognizable browser branding, and continue to function when the user is not connected to the Internet.

In the not too distant future, a non-expert user will sit down at a new computer (perhaps provided to them by an employer or purchased at a store), click on the "Word Processor" link on the computer's desktop, and will begin typing a document. The application will appear similar to other word processors but will actually be a sophisticated web application running in a cloaked web browser. This shift to a web-based technology will be accompanied by a radical shift in the user's rights and "expectation of privacy," at least as interpreted by the courts; even if the user herself does not realize that her documents are ever leaving her computer. Many users will be completely unaware that this shift has occurred, at least until it is too late.

II.   MANY CLOUD COMPUTING SERVICES ARE NEEDLESSLY VULNERABLE TO HACKERS

The vast majority of cloud computing services are, by default, insecure.[42] Often, usernames and passwords are transmitted to remote servers via unencrypted network connections. In cases where encryption is used, it is typically only used to transmit the initial login information, while all subsequent data is sent *in the clear*.[43] This data can easily be snooped on by hackers. This exposes users to significant risks when they connect to the services using public wireless networks.[44] These flaws are

---

42. Predrag Klasnja et al., *"When I am on Wi-Fi, I am Fearless:" Privacy Concerns & Practices in Everyday Wi-Fi Use*, *in* CHI '09: PROC. OF THE 27TH INT'L CONF. ON HUMAN FACTORS IN COMPUTING SYS. 1993 (2009), *available at* http://www2.seattle.intel-research.net/~jjung/FormativeUserStudy4CHI.pdf ("A majority of the large Web-based email services, for example, encrypt the login process, but not the contents of email messages. Anyone along the path between the user and the service's data center could intercept this information, opening users to privacy and security risks."); Letter from Jacob Appelbaum et al. to Google CEO Eric Schmidt (June 16, 2009), *available at* http://www.cloudprivacy.net/letter/ ("Google is not the only Web 2.0 firm which leaves its customers vulnerable to data theft and account hijacking. Users of Microsoft Hotmail, Yahoo Mail, Facebook and MySpace are also vulnerable to these attacks.").

43. Paul Ohm, *Good Enough Privacy*, 2008 U. CHI. LEGAL F. 1, 9 n.34 (2008) ("'In the clear' is a term of art which means without encryption.").

44. Klasnja et al., *supra* note 42 ("[T]he broadcast nature of Wi-Fi means that anyone within range of the network can receive and potentially read transmissions intended for any

rarely, if ever, disclosed to end-users.[45]

In order to explore the issues surrounding these privacy risks, consider the following two scenarios:

Alice, a college student, decides to do her homework at a coffee shop, using her laptop and a copy of Microsoft Word. In such a situation, it will be exceedingly difficult for a malicious person (perhaps sitting at another table or across the street) to breach her privacy. If the snooping hacker is sitting behind her, he could perhaps read over Alice's shoulder, but such activity would soon become obvious. If he is extremely tech savvy, perhaps he can hack into Alice's computer over the wireless network—but this will require that Alice's operating system be vulnerable to an attack for which no patches have been released by the software vendor, or which Alice has not yet applied. Such an attack will also require that the adversary perform the *active* task of breaking into Alice's computer in order to steal a copy of her documents.

Compare this to a similar situation in which Alice is using Google Docs on her laptop, at the same coffee shop. In this case, every character that Alice types into her word processing document is transmitted to Google's remote servers over the unsecured wireless network.[46] Due to the fact that most of Google's services do not by default use encryption to transmit user data, the attacker can use one of many off-the-shelf tools to *passively* "sniff" the network and capture Alice's private data as it is transmitted to the company's servers. Worse, the hacker can capture the credentials necessary to later impersonate Alice, thus enabling him to later connect to her account and browse through older documents and emails.[47]

Freely available off the shelf tools automate these widely publicized vulnerabilities in many cloud computing services.[48] These tools abstract

---

other device on the network.").

45. Klasnja et al., *supra* note 42, at 2 ("Despite living in a technologically sophisticated area of the U.S., the participants were not aware that information sent over Wi-Fi could be seen by others.").

46. In some cases, this happens in real-time, in order for features like spell-check to work. In others, documents will be automatically saved to a remote server at regular intervals.

47. Posting of Brian Krebs to The Washington Post blog, New Tool Automates Webmail Account Hijacks, http://blog.washingtonpost.com/securityfix/2007/08/new_tool_automates_webmail_acc.html (Aug. 2, 2007, 15:16 EST) ("While Web 2.0 services like Gmail and Facebook encrypt usernames and passwords that users submit when they log into their accounts, all keep tabs on users by placing a 'cookie,' or tiny text file, on the user's computer. Those cookie files are not encrypted, which means that anyone who is monitoring the network traffic flowing over a wireless network can simply intercept one of those cookie files. This allows an attacker to log in as the victim, effectively cloning the account without knowledge of the victim's login credentials.").

48. A commentator described one such vulnerability:

It turns out an adversary able to position themselves in between you and a website is able to inject arbitrary http-based content elements for domains that do not set the

away the technical details underpinning the data capture techniques, and since they allow the attacks to be performed with a few mouse clicks, are accessible to even non-expert attackers. While the service providers have known about these flaws (and the ease with which they can be exploited) for several years,[49] they continue to ship products with unsafe default settings,[50] and, in most cases do not offer any protection to end users.[51]

Users of cloud computing services lack basic security protections which users of traditional PC based software often take for granted. Google, the market leader, and nearly all other leading cloud providers offer products that are by default vulnerable to snooping, account hijacking, and data theft by third parties.[52] Every time a user logs into their Microsoft Hotmail, Google Docs, Flickr, Facebook or MySpace

---

> "Encrypted Sessions Only" property of their cookies, and thus cause your client to transmit these cookies via clear text, intercept them, and impersonate you.

Posting of Mike Perry to fscked.org, Automated HTTPS Cookie Hijacking, http://fscked.org/blog/fully-automated-active-https-cookie-hijacking (Aug. 14, 2008, 13:39) (Code available at Cookiemonster, Project Hosting on Google Code, http://code.google.com/p/cookiemonster/ (last visited Oct. 29, 2009)); Another example was described by its developer:

> This tool . . . will transparently hijack HTTP traffic on a network, watch for HTTPS links and redirects, then map those links into either look-alike HTTP links or homograph-similar HTTPS links. It also supports modes for supplying a favicon which looks like a lock icon, selective logging, and session denial.

Moxie Marlinspike, SSLStrip, http://www.thoughtcrime.org/software/sslstrip/ (last visited Oct. 24, 2009); s*ee also* Posting of Robert Graham to Errata Security, Sidejacking with Hamster, http://erratasec.blogspot.com/2007/08/sidejacking-with-hamster_05.html (Aug. 5, 2007, 11:55 AM) (tool available at http://www.erratasec.com/sidejacking.zip (last visited Jan. 27, 2010)).

49. One of the developers commented that:

> I described this attack in detail in a post to BugTraq and notified Google a year ago, but unfortunately, my announcement was largely overshadowed by Robert Graham's "SideJacking" demonstration at Black Hat. His tool was simply a sniffer that just gathered cookies for sites as users on the local network visited them. The attack I described was much more flexible, much more powerful, and just as automated, but without a tool and a demonstration to back up my claims, nobody listened.

Perry, *supra* note 48.

50. Jay P. Kesan & Rajiv C. Shah, *Setting Software Defaults: Perspectives from Law, Computer Science and Behavioral Economics*, 82 NOTRE DAME L. REV. 583, 585 (2006) ("Default settings are pre-selected options chosen by the manufacturer or the software developer. The software adopts these default settings unless the user affirmatively chooses an alternative option.").

51. Elinor Mills, *Google Making SSL Changes, Other Sites Quiet*, CNET NEWS, Aug. 22, 2008, http://news.cnet.com/8301-1009_3-10023958-83.html ("Hotmail, Yahoo Mail, and Facebook . . . remain vulnerable to a so-called 'man-in-the-middle attack' in which someone on the same Wi-Fi network hijacks the session cookies that are transmitted between a user's browser and a Web site.").

52. Adobe's Photoshop Express is a rare exception to the norm. This service is only available via a secure SSL encrypted session. See, e.g., Photoshop.com, http://www.photoshop.com/, which automatically redirects to the secure Photoshop.com, https://www.photoshop.com (last visited Oct. 24, 2009).

account from a coffee shop or other public wireless network, they risk having their private data stolen by hackers.

This problem is not due to the web-based nature of these services. Consumers are able to safely check their online bank accounts, order books from Amazon, or trade stocks with an online broker while using open wireless networks without any risk of account hijacking or data theft. Yet this private and valuable information flows over the same Internet connection that Google, Microsoft, Facebook and MySpace have somehow been unable (or unwilling) to secure.

A.   The Benefits of Network Encryption

Bank of America, American Express and Amazon[53] all use the industry standard Hypertext Transfer Protocol Secure (HTTPS) encryption protocol to ensure that all customer information is securely transmitted over the network.[54] This technology enables a user to safely conduct business online, without the risk of a hacker capturing her private data as it crosses the network. This is because to third parties, her encrypted communications appear as undecipherable gibberish.

Most cloud-based services transmit nearly every single bit of a user's data to the service's central servers over the network in the clear. In some cases, this even includes the username and password used to login to the user's account, significantly raising the risk of account theft.[55] This information can be captured with one of many off-the-shelf tools known as "packet sniffers." Some operating systems, such as Linux and Apple's Mac OS even include these data capture tools out of the box.[56]

While most cloud services do not offer any encryption at all, Google does at least offer HTTPS encryption for many of its services. However, for its cloud-based word processing, spreadsheets and calendar products, it does so as an unadvertised option, which is disabled by default.[57] Other

---

53. Mills, *supra* note 51 ("Amazon encrypts communications related to payment but not purchase history and recommendations, according to Perry. An Amazon spokeswoman said the company does not comment on security measures.").

54. In fact, it is impossible to connect to the web sites of both Bank of America and American Express using anything *but* an encrypted session. For example, typing http://www.americanexpress.com automatically redirects the user's browser to https://www.americanexpress.com. Likewise, visiting http://www.bankofamerica.com immediately redirects to https://www.bankofamerica.com.

55. For example, MySpace users send their usernames and passwords to the site over an unencrypted connection.

56. Both Mac OS and most Linux distributions include tcpdump. This tool is not particularly easy to use, and so many users opt for the far more user-friendly "Wireshark."

57. Users of Google's services can enable security on a case-by-case basis by connecting to a different URL for the various Google services. Rather than connecting to http://docs.google.com, users must connect to https://docs.google.com. Due to the fact that web browsers default to http (if nothing else is specified), a user who simply types "docs.google.com" into her web browser will have her communications sent over the network

cloud providers such as Microsoft, Yahoo and Facebook do not offer HTTPS protection for their customer's communications. Even if a user of these services wishes to protect herself from third party snoopers, there is nothing that she can do. Of course, Microsoft, Yahoo and Facebook *could* offer HTTPS. Likewise, they and Google could even turn it on *by default* for all of their services so that all users are automatically protected from all passive data theft.

Contrast this to the security of online banks—consumers don't have to go out of their way to login to the "secure" front-end to their bank's website. They don't have to manually enter a different URL, or select a hidden configuration option. Consumers simply go to the bank's website, and login. Everything else is taken care of for them.

B.   *Why do Cloud Providers Opt to Leave Users Exposed?*

HTTPS is a technical standard which is supported by every modern web browser and every popular web server.[58] The free open-source Apache web server, which powers most popular websites,[59] includes HTTPS support by default.

In 2007, Google's poor security defaults were the subject of some tech media coverage, primarily due to the release of tools that automated the theft of data from Google customers' accounts. Defending the company's decision at the time to not enable HTTPS encryption by default for its Gmail service, a Google spokesperson stated then that:

> We use [HTTPS encryption] to protect your password every time you log into Gmail, but we don't use [HTTPS encryption] once you're in your mail unless you ask for it . . . . Why not? Because the

---

without any encryption. In 2008, more than a year after Google was first notified about security flaws with which its customers account authentication tokens could be hijacked, the company released a new feature to enable automatic encryption for Gmail. *See* Posting of Ariel Rideout to The Official Gmail Blog, Making Security Easier, http://gmailblog.blogspot.com/ 2008/07/making-security-easier.html (July 24, 2008, 14:00). The company's help page for the encryption preference notes that:

> If you sign in to Gmail via a non-secure Internet connection, like a public wireless or non-encrypted network, your Google account may be more vulnerable to hijacking. Non-secure networks make it easier for someone to impersonate you and gain full access to your Google account, including any sensitive data it may contain like bank statements or online log-in credentials. We recommend selecting the 'Always use https' option in Gmail any time your network may be non-secure.

See Gmail Help, Enabling the HTTPS Setting, http://mail.google.com/support/bin/ answer.py?answer=74765 (last visited Oct. 29, 2009).

    58. *See* Internet Engineering Task Force, The Transport Layer Security (TLS) Protocol Version 1.2, http://tools.ietf.org/html/rfc5246 (last visited Oct. 29, 2009).

    59. Netcraft, January 2009 Web Server Survey, http://news.netcraft.com/archives/2009/ 01/16/january_2009_web_server_survey.html (noting that Apache is used by more than 50% of the servers on the web).

downside is that [HTTPS encryption] can make your mail slower. Your computer has to do extra work to decrypt all that data, and encrypted data doesn't travel across the internet as efficiently as unencrypted data. That's why we leave the choice up to you.[60]

For encryption to be a "choice," Google's customers would need to receive notice of the risks if they do not seek out this largely unadvertised option.[61] The company does not provide its customers with this information, and so it is unlikely that most users would believe that the issue of encryption protection for email is something they have affirmatively decided. However, while the company argues that this issue is one of choice, the company has forced encryption (with no option to turn it off) for users of some of its other products.

Google's Health service enables users to browse through and manage their private health information online. Google's Voice service lets customers initiate VOIP phone calls, send text messages, and manage voicemail inboxes. However, unlike with its Docs, Spreadsheets and Calendar products, Google only provides access to Health and Voice via HTTPS encrypted communications sessions, perhaps recognizing the highly sensitive health and call record information users entrust to Google. Likewise, Google's AdWords and AdSense products, which form the backbone of Google's advertising business, can only be managed by customers using a secure HTTPS connection.

In June 2009, 38 industry and academic experts from the fields of computer security, privacy, and law wrote an open letter to Google's Chief Executive Officer to chastise the company for its poor HTTPS defaults (full disclosure: the author of this article was the author and organizer of that open letter).[62] Seven months later, the company enabled HTTPS encryption by default for all of its Gmail users, although users of its Docs, Spreadsheets and Calendar services must still proactively connect via a HTTPS based URL in order to protect their sessions against hijacking.[63]

---

60. Rideout, *supra* note 57.

61. Appelbaum, *supra* note 42 ("[Google] currently does very little to educate its users, and the sparse information describing encryption options is hidden, and presented in terms that few members of the general public will understand.").

62. Ryan Singel, *Encrypt the Cloud, Security Luminaries Tell Google—Update*, WIRED, June 16, 2009, http://www.wired.com/threatlevel/2009/06/google_ssl/ ("Google is putting millions of users at risk of fraud from hackers and needs to enable encryption by default on its most popular web apps, including Gmail and Google Docs, a gaggle of security researchers told the search giant Tuesday in an open letter."); *see also* Appelbaum, *supra* note 42.

63. A Google spokesperson described the change:

In 2008, we rolled out the option to always use https—encrypting your mail as it travels between your web browser and our servers. Using https helps protect data from being snooped by third parties, such as in public wifi hotspots. We initially left the choice of using it up to you because there's a downside: https can make your

The likely reason why Google took several years to offer HTTPS encryption by default and why most other companies have opted to forgo HTTPS completely is the issue of cost. Simply put, providing a HTTPS encrypted connection takes significantly more processing power and memory for a web server to provide than a "normal" web connection. For example, if a common web server can normally process 30,000 simultaneous connections, it might only be able to handle 5,000 simultaneous SSL encrypted connections.[64] Thus, enabling HTTPS by default will significantly increase the cost of providing services to end-users, simply due to the massive increase in the number of servers required to handle and process all of those encrypted connections.

Google's decision to adopt encryption by default for its Gmail service remains a minority practice in the cloud computing industry. Users of Facebook, MySpace, Yahoo and Microsoft are still vulnerable to the same data theft and account hijacking attacks. While Google improved the security defaults for its Gmail service in response to high-profile criticism from the security community, the other major Web 2.0 firms have shown little interest in deploying encryption technologies, and thus continue to deliver their users' private data over insecure connections. The problem, it seems, is industry wide.

C.   *Cloud Providers Have Little Incentive to Protect Users*

Banks and online merchants are legally required to bear the financial burden of online fraud, with consumer liability typically capped at just $50.[65] This responsibility provides the banks and merchants with a strong incentive to encrypt their customers' data as it is transmitted over the Internet as doing so will significantly reduce the risk of fraud or data loss for which they must otherwise pay.[66]

---

mail slower since encrypted data doesn't travel across the web as quickly as unencrypted data. Over the last few months, we've been researching the security/latency tradeoff and decided that turning https on for everyone was the right thing to do.

Posting of Sam Schillace to The Official Gmail Blog, Default HTTPS Access For Gmail, http://gmailblog.blogspot.com/2010/01/default-https-access-for-gmail.html (Jan. 12, 2010, 21:14).

64. Krishna Kant et al., *Architectural Impact of Secure Socket Layer on Internet Servers*, *in* PROC. OF THE 2000 IEEE INT'L CONF. ON COMPUTER DESIGN: VLSI IN COMPUTERS & PROCESSORS 1 (1999), *available at* http://www.kkant.net/papers/ssl_paper.pdf ("The use of SSL increases computational cost of the transactions by a factor of 5-7."); *see also* Li Zhao et al., *Anatomy and Performance of SSL Processing*, *in* PROC. OF THE IEEE INT'L SYMPOSIUM ON PERFORMANCE ANALYSIS OF SYS. & SOFTWARE (2005).

65. 15 U.S.C. § 1693g (2008); Truth in Lending Act, 15 U.S.C. §§ 1601–1693 (2009).

66. In fact, the large data breaches seen in 2008 and 2009 were a direct result of merchants not using encryption in their back-end systems, based on the (false) assumption that hackers would not be able to see this data in transit. *See, e.g.*, Mark Jewell, *Encryption Faulted in TJX Hacking*, WASH. POST, Sept. 25, 2007, http://www.washingtonpost.com/wp-

Unfortunately, similar incentives do not exist for the cloud computing providers. Most of these services do not charge their customers anything for the services that they provide, and thus never knowingly handle sensitive financial information such as credit cards. While many customers might feel that the information which they have entrusted to Google and Yahoo is sensitive, this data often does not fall into one of the select categories for which legally required data security standards exist, such as for medical data, social security numbers, and financial information.

While most users' word processing documents or photo collections may not be that valuable to a fraudster, an email account can have considerable value—due to the fact that inboxes routinely contain passwords and account information for *other* websites. For example, many websites will resend a password to a user's email address in the event that the user forgets her password. Thus, a poorly secured email account can be leveraged to gain access to a victim's bank account, brokerage account or online health records.

D.   *The Cloud Computing Industry Suffers From Market Failure*

If cars did not come with locks, the market would soon provide an incentive for manufacturers to add them. Once vehicle owners came back from a night out on the town and discovered their cars missing, these theft victims would soon tell their friends, and make certain to demand locks from the dealer during their next purchase.

No such consumer-driven incentives for security exist in the cloud computing industry. Consider that if a consumer's car is stolen, they usually learn of the theft rather promptly, as the car will be missing when they next attempt to use it. The theft or unauthorized access to an online account is different, since both the thief and the legitimate owner can concurrently access the same cloud-based resource. That is, the user can continue to create and edit documents, while the thief is able to read each new memo and spreadsheet as they are created. The online account, unlike the stolen car, is a non-rivalrous good[67] (at least until the attacker changes the password and locks the user out). As a result, users of most cloud-based services are not able to discover that something bad has happened and thus demand a solution from the service provider.[68]

---

dyn/content/article/2007/09/25/AR2007092500836.html.

67. Rivalrous goods are goods whose consumption by one consumer prevents simultaneous consumption by other consumers. *See* Maxwell School of Syracuse University, Rival and Nonrival Goods, http://wilcoxen.maxwell.insightworks.com/pages/130.html (last visited Jan. 27, 2009).

68. Some companies, such as AOL's Instant Messenger, and Google's Gmail are the exception to this. Both companies tell users when another computer is currently logged into

Furthermore, once consumers do find out that their accounts have been hacked into, they are often not able to identify the event that lead to the unauthorized access. While a shattered car window reveals the entry point the thief used to break into a vehicle in order to steal a stereo, there is no tell-tale evidence left behind when a hacker snoops on an insecure cloud session conducted over a public wireless network in a coffee shop or library.

Most users of cloud computing services are unaware of the following:

- Their private information is insecurely transmitted over the network;
- That widely available technologies exist to provide for that secure transmission;
- That the cloud service providers have opted to not deploy such safeguards; and
- That off-the shelf tools exist which can be used by hackers to easily break into their private email accounts and other cloud services.

Due to the widespread (yet understandable) ignorance of most end-users, it is not terribly surprising that all of the major cloud computing providers opt to ignore the encryption issue. There simply isn't sufficient market demand for these firms to allocate the considerable financial and engineering resources required to deploy encryption by default for all of their products. In a highly competitive industry with razor thin per-customer profits, there is no incentive to needlessly dedicate computing resources to something for which most customers have not expressed a want.

Encryption can be thought of as a shrouded product attribute similar to the cost of printer ink refills, or hidden fees associated with "free checking" bank accounts.[69] Consumers rarely consider the full cost of these products, because they do not calculate in the added costs of these shrouded attributes. When most consumers evaluate a cloud computing service, they likely consider the usability, speed and perhaps weigh in social factors—such as the number of their friends who are

---

their account. Most cloud-based services do not offer such a feature.

69. Xavier Gabaix & David Laibson, *Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets*, 121(2) Q.J. ECON. 505 (2006), *available at* http://www.econ.yale.edu/~shiller/behmacro/2003-11/gabaix-laibson.pdf ("[C]onsumers sometimes fail to anticipate contingencies. When consumers pick among a set of goods, some consumers do not take full account of *shrouded product attributes*, including maintenance costs, prices for necessary add-ons, or hidden fees . . . . Shrouded attributes may include surcharges, fees, penalties, accessories, options, or any other hidden feature of the ongoing relationship between a consumer and a firm.").

currently using it. Consumers are unlikely to consider the encryption offered (or not) by the service, particularly since most are not even aware of the existence of encryption when it is offered.[70]

In their seminal work analyzing markets with shrouded attributes, Gabaix and Laibson reveal that these goods can lead to two forms of exploitation in the market: Optimizing firms exploit myopic consumers through marketing schemes that shroud high-priced add-ons. In turn, sophisticated consumers exploit these marketing schemes. Simply put, by hiding the true cost of a product, a firm can offer the good at a lower initial price, since it will be able to recoup any lost profit via after-market sales. Savvy consumers can take advantage of this if substitute add-on goods (such as generic printer ink refills) are available. The paradox that Gabaix and Laibson identify is that this leads to a situation in which manufacturers have no incentive to abandon the shrouded good model, offer fairly priced goods, and advertise the nefarious business practices employed by their competitors. This is because each consumer educated about the shrouded attributes, rather than flocking to fair vendors, will instead purchase cheap after-market substitutes, and continue to purchase the subsidized shrouded good.

With this economic theory in mind, consider the market for encrypted cloud-based services. Google offers HTTPS encryption for its Docs, Spreadsheets, and Calendar services, but does not turn it on by default. If Google opts to turn encryption on by default, its cost of offering the service to each customer will go up. Assuming that its profits do not, the company will either have to make do with less profit per customer, or more likely, reduce the cost of operating the service through other means. Faced with such a situation, Google might have to lower the amount of free disk space it provides to each customer or switch to a model in which encryption is only offered to paying customers.

Faced with a choice between two cloud providers, one that encrypts all traffic but offers less storage, and a service which only offers encryption to users savvy enough to enable the option and more disk space, most savvy users would opt for the latter provider. In this situation, naïve users subsidize those more savvy, by enabling them to enjoy both encryption and large disk quotas.

Thus, when one provider offers this subsidized form of encryption, it creates a strong disincentive for other firms to go down the path of encryption by default. Such a firm will be unable to compete for naïve

---

70. *See generally* STUART E. SCHECHTER ET AL., THE EMPEROR'S NEW SECURITY INDICATORS: AN EVALUATION OF WEBSITE AUTHENTICATION AND THE EFFECT OF ROLE PLAYING ON USABILITY STUDIES (2007) (presented at the 2007 IEEE Symposium on Security and Privacy, May, 2007), *available at* http://www.usablesecurity.org/emperor/emperor.pdf.

customers, since it will have lowered the amount of disk space and other features in order to pay for the encryption related costs. This firm will also be unable to attract the savvy customers, since these will flock to providers which offer both encryption as well as large amounts of disk space.[71]

D.   *Providing Incentives for Network Encryption*

One solution to the problem of excessive prices for after-market print supplies is to require printer manufacturers to prominently advertise the price per page at the place of purchase, thus making it easy for consumers to easily compare prices. In such a market with posted prices, printer manufacturers which sell higher-priced printers with reasonably priced ink can compete with those which make use of shrouded ink prices.

A similar fix can be applied to the market for cloud-based services— by requiring vendors to clearly disclose the risks of using their services without encryption. If consumers actually realize the risks they face when using unencrypted cloud-based services, it may create sufficient market demand to encourage firms to provide their customers with encrypted services. Such a disclosure requirement could take the form of a mandatory notice, placed on the login pages for each cloud-based service lacking HTTPS encryption.[72] Examples of such a notice could include:

> WARNING: Email messages that you write can be read and intercepted by others when you connect to this service using a public network (such a wireless network at a coffee shop, public library or school). If you wish to protect yourself from this risk, click here for a secure version of this service.

> WARNING: The word processing documents that you create using this service can be read and modified by others when you connect to this site using a public network (such a wireless network at a coffee shop, public library or school). Widely available technologies exist that will protect you from these risks, but this service provider has opted to not offer such protective functionality.

---

71. This theory at least explains why only Google offers encrypted mail, word processing and spreadsheets. As for why no social networks offer HTTPS, we are still scratching our heads.

72. These kinds of mandatory disclosure are a form of compelled commercial speech, and as such will only pass First Amendment scrutiny if it can be demonstrated that they serve a compelling state interest. Such analysis is beyond the scope of this article. For more on this area of the law, see Robert Post, *Transparent and Efficient Markets: Compelled Commercial Speech and Coerced Commercial Associations in* United Foods, Zauderer, *and* Abood, 40 VAL. U. L. REV. 555 (2006).

Such text would need to be prominently displayed, and not hidden deep within a website's terms of service. However, given Google's much publicized resistance to being forced to add any text to its website,[73] it is quite likely that the company would opt to bear the financial burden of enabling encryption by default for all of its services, rather than clutter up its "beautiful clean home page."[74]

While such a desire to keep their home pages clutter free might not motivate other companies, the increase in consumer awareness of the risks made possible through such mandatory labeling, might provide enough of a push in market demand to nudge these firms into offering such product functionality.

An alternative approach, of course, would simply be for the government to regulate providers of cloud computing services, as it has already done in the banking and health industries. Banks are simply not permitted to make encryption a "choice" to be left up to consumers, just as auto manufacturers are no longer permitted to make seat belts an optional add-on for safety conscious car buyers.

I would prefer that regulators first force cloud computing providers to display clear educational warnings before those regulators go down the path of mandating specific technologies. However, if educational warnings fail to provoke a sufficient market response, stronger regulation might be appropriate.

III. PERSONAL PRIVACY, CLOUD COMPUTING AND THE GOVERNMENT

The preceding section focused on threats to user privacy from private actors, mainly hackers who are able to easily hijack and steal cloud-based user data. Such hacking happens without the direct knowledge or consent of the service provider, who will shut down such unauthorized access as soon as they learn about it.

This article will now shift focus to another serious threat to end-user privacy—one without easy fixes. The focus of this will be on invasions of user privacy in which the service provider is not only aware, but assists in the act, albeit due to coercion. In such cases, the surveillance occurs pursuant to a lawful order obtained by government

---

73. Posting of Saul Hansell to New York Times Bits blog, Google Fights for the Right to Hide Its Privacy Policy, http://bits.blogs.nytimes.com/2008/05/27/google-fights-for-the-right-to-hide-its-privacy-policy/ (May 27, 2008, 12:14) ("Google believes so strongly that adding the phrase 'privacy policy' to its famously Spartan home page would distract users that it has picked a fight with an advertising trade group over the issue. . . . Larry Page, the company's co-founder, didn't want a privacy link 'on that beautiful clean home page . . . . His argument is when you come to Google and you are looking for information, it is that big fat box' for search and little else, [said an executive from a Google competitor].").

74. *Id.*

agents,[75] and so even if the service provider wishes to protect its customers, it cannot.

The second part of this article will be arranged as follows: It will first explore the changing market dynamics which have made large-scale surveillance of electronic communications both easy and cheap for the government. As a result, the marginal cost of watching one more person has now dropped to essentially nothing. It will then briefly explore the third party doctrine, which is the primary legal doctrine which the Government relies on to force the disclosure of user information held by third parties, neutralizing the traditional Fourth Amendment protection offered to people's personal documents and papers.

The solution to the privacy problems posed by the third-party doctrine is actually rather simple—the mass deployment of encryption by software manufacturers and service providers. However, encryption alone is not the answer. This is due to government's lawful powers of coercion, through which it can compel service providers to insert back doors in their own products, circumventing the encryption that would otherwise protect their customers' data. The core of this article will focus on this issue, and the way that this power to force the insertion of back doors can be applied to the providers of cloud computing services.

A.   *The Changing Economics of Surveillance*

The mass adoption of digital technologies over the past decade has lead to a radical shift in the government's ability to engage in large scale surveillance.

Fifty years ago, if a government agency wished to monitor a suspect, it had to dedicate a number of agents to engage in around the clock physical surveillance and ask the post office to intercept and divert her mail, which would be steamed open, itself a labor intensive task. If phone surveillance was required, someone had to climb up a telephone pole or open an access panel attached to an apartment building in order to physically attach wires to the suspect's line. With the tap in place, agents would need to monitor the calls around the clock. Finally, if investigators wished to learn the contents of conversations spoken inside the home, a hugely laborious and risky "black bag job" would be necessary, in which highly skilled agents would break into the suspect's residence or workplace to covertly install microphones and remote transmitters.[76]

---

75. In some cases, this may take the form of a warrant, but it may also be via a subpoena, or some other method in which there is little to no judicial oversight.

76. A Senate study reported that:

  Since 1948 the FBI has conducted hundreds of warrantless surreptitious entries to gather domestic and foreign intelligence, despite the questionable legality of the technique and its deep intrusion into the privacy of targeted individuals. Before

Times have changed, as have wiretapping techniques.[77] Telecommunications companies and Internet Service Providers now have dedicated legal compliance departments,[78] some open 24 hours per day, through which law enforcement agents can obtain wiretaps, emails, text messages or real time phone location information. Once contacted, service providers can usually process the request and initiate a wiretap with a few keystrokes—all without the need to enter the suspect's home or even manually connect wires in a switching center.[79]

Once the wiretap has begun, the customer's data is directly transmitted to the government servers.[80] While this transmission of a suspect's communications is typically performed on a case-by-case basis in response to specific requests, it appears that at least one telecommunications company has given the FBI wholesale access to its

---

1966, the FBI conducted over two hundred "black bag jobs." These warrantless surreptitious entries were carried out for intelligence purposes other than microphone installation, such as physical search and photographing or seizing documents. Since 1960, more than five hundred warrantless surreptitious *microphone installations* against intelligence and internal security targets have been conducted by the FBI, a technique which the Justice Department still permits. Almost as many surreptitious entries were conducted in the same period against targets of criminal investigations. . . . Surreptitious entries were performed by teams of FBI agents with special training in subjects such as "lock studies."

S. SELECT COMM. TO STUDY GOVERNMENTAL OPERATIONS WITH RESPECT TO INTELLIGENCE ACTIVITIES, FINAL REPORT: SUPPLEMENTARY DETAILED STAFF REPORTS ON INTELLIGENCE ACTIVITIES AND THE RIGHTS OF AMERICANS, S. REP. NO. 94-755, at 355 (1976), *available at* http://www.icdc.com/~paulwolf/cointelpro/churchfinalreportIIIf.htm (emphasis omitted).

77. One commentator illustrates the difference:

We all know the scene: It is the basement of an apartment building and the lights are dim. The man is wearing a trench coat and a fedora pulled down low to hide his face. Between the hat and the coat we see headphones, and he appears to be listening intently to the output of a set of alligator clips attached to a phone line. He is a detective eavesdropping on a suspect's phone calls. This is wiretapping—as it was in the film noir era of 1930s Hollywood. It doesn't have much to do with modern electronic eavesdropping, which is about bits, packets, switches, and routers.

Whitfield Diffie & Susan Landau, *Communications Surveillance: Privacy and Security at Risk,* ACM QUEUE, Sept. 11, 2009, http://queue.acm.org/detail.cfm?id=1613130.

78. *See generally* Search High-Tech-Crime, ISP List, http://www.search.org/programs/hightech/isp/ (last visited Oct. 23, 2009) (listing the legal compliance departments at hundreds of phone/Internet companies).

79. Posting to Threat Level Blog, DCS-3000 is the FBI's New Carnivore, http://www.wired.com/threatlevel/2006/04/dcs3000_is_the_/ (Apr. 17, 2006, 19:04) ("[S]ome 80 to 90 percent of old-fashioned wireline phone switches are apparently not CALEA compliant, which means the feds still have to perform those taps the old fashioned way. But every wireless switch in the country is CALEA ready . . . [and] [o]ver 80 percent of intercepts are now targeting wireless phones . . . .").

80. *Id.* ("Aiding the easy listening is a 'dial-back' hack, in which phone company computers call up the law enforcement agency and pipe the customer's conversations down the open line.").

entire network, enabling agents to tap customers at will without requiring that the company's staff enable or assist with the surveillance.[81] Similarly, multiple Internet service providers have been accused of providing raw access to their "backbone" networks to the National Security Agency, which is then free to target individual communications for surveillance without the need to involve the communications companies.[82]

Even just five years ago, if the government wanted to get access to potentially incriminating evidence from the home computers of ten different suspects, investigators had to convince a judge that they had probable cause in order to obtain a search warrant for each person. The investigating agency would then send agents to raid the homes of the individuals, remove the computers, and later perform labor-intensive forensic analysis in order to get the files. In the event that the suspects knew each other, the government might opt to perform a simultaneous raid (thus requiring even more manpower), so that one suspect could not notify the others—who might then delete their files.

Now that many users have switched to cloud-based services, digital search and seizure has become far easier. Law enforcement agencies have essentially deputized the technology companies that provide applications to end users, and made these firms a key component of the surveillance infrastructure.[83] Thus, the private documents of ten individuals can now

---

81. Posting of Kevin Poulsen to Threat Level Blog, Whistle-Blower: Feds Have a Backdoor into Wireless Carrier—Congress Reacts, http://blog.wired.com/27bstroke6/2008/03/whistleblower-f.html (Mar. 6, 2008, 17:15) ("Because the data center was a clearing house for all Verizon Wireless calls, the transmission line provided the Quantico recipient direct access to all content and all information concerning the origin and termination of telephone calls placed on the Verizon Wireless network as well as the actual content of calls.") (quoting Amended Complaint at 23, McMurray v. Verizon Commc'ns Inc., No. 06-CV-3650 (S.D.N.Y. 2006)).

82. The EFF reported on this surveillance:

> The cases allege that the government, in coordination with AT&T, intercepts communications (like phone calls and emails), and that AT&T illegally discloses communications records to the government. The core component of the surveillance is the government's *nationwide network* of sophisticated communications surveillance equipment, attached to the key facilities of telecommunications companies such as AT&T that carry Americans' internet and telephone communications.
>
> Through this shadow network of surveillance devices, the government has acquired and continue [sic] to acquire the content of the phone calls, emails, instant messages, text messages and web communications, both international and domestic, of practically every American who uses the phone system or the internet in an unprecedented suspicionless general search through the nation's communications networks.

Electronic Frontier Foundation, NSA Spying FAQ, http://www.eff.org/nsa/faq (last visited Oct. 23, 2009) (emphasis in original).

83. Gidari, *supra* note 5, at 536 ("[Service providers] have, last time I looked, no line entry in any government directory; they are not an agent of any law enforcement agency; they

be obtained through a single subpoena to Google or Microsoft—whose engineers will then locate the files (stored on the company's servers) and provide them to the government.

The shift to cloud computing obviously brings many benefits to law enforcement: significantly reduced manpower requirements, no need to go before a judge or establish probable cause in order to obtain a warrant, as well as the complete elimination of physical risk to agents who might be shot or attacked during a raid.

B.   Surveillance at Near Zero Marginal Cost

Modern surveillance technology is notable for the fact that the vast majority of the cost of systems is for up-front infrastructure. Intelligence and law enforcement agencies must purchase data centers filled with expensive computer equipment, and then develop custom software for initiating, recording, cataloging and indexing the wiretaps. The government has required that telecommunications companies upgrade to modern digital switches with digital intercept capabilities and provided hundreds of millions of dollars to help pay for this.[84]

Once these up front or predictable fixed costs (such as salaries for agents and lawyers) have been paid for, modern surveillance is surprisingly cheap, if it costs anything at all. In some cases, telecommunications companies and ISPs may charge to initiate and continue surveillance, as the law permits.[85] In other cases, the service providers may provide the information for free.

---

do not work for or report to the Federal Bureau of Investigation ('FBI'); and yet, you would never know that by the way law enforcement orders them around and expects blind obedience.")

    84. Posting of Ryan Singel to Threat Level Blog, Secret Data in FBI Wiretapping Audit Revealed With Ctrl+C, http://blog.wired.com/27bstroke6/2008/05/secret-data-in.html (May 16, 2008, 16:51) ("University of Pennsylvania professor Matt Blaze discovered that the Justice Department's Inspector General's office had failed to adequately obfuscate data in a March report . . . about FBI payments to telecoms to make their legacy phone switches comply with 1995 wiretapping rules. That report detailed how the FBI had finished spending its allotted $500 million to help telephone companies retrofit their old switches to make them compliant with the Communications Assistance to Law Enforcement Act . . . . The FBI paid Verizon $2500 a piece to upgrade 1,140 old telephone switches. Oddly the report didn't redact the total amount paid to the telecom—slightly more than $2.9 million dollars . . . .").

    85. 18 U.S.C. § 2518(4) (2006) ("Any provider of wire or electronic communication service, landlord, custodian or other person furnishing such facilities or technical assistance *shall be compensated therefor by the applicant for reasonable expenses* incurred in providing such facilities or assistance.") (emphasis added); 50 U.S.C. §§ 1881a(h)(1)–(2) ("[T]he Attorney General and the Director of National Intelligence may direct, in writing, an electronic communication service provider to . . . immediately provide the Government with all information, facilities, or assistance necessary to accomplish the acquisition . . . . The Government *shall compensate, at the prevailing rate, an electronic communication service provider for providing information, facilities, or assistance* in accordance with a directive issued pursuant to paragraph (1).") (emphasis added).

For those companies that do charge, surveillance can be a profit center.[86] A $50 per month home Internet connection can lead to hundreds of dollars in additional revenue when that customer is wiretapped,[87] while an $80 per month phone line can lead to thousands of dollars in revenue when it is wiretapped.[88] On the other hand, if a telecommunications company provides the government unfettered access to its backbone network, wiretaps are essentially free – since the equipment, leased data lines and agent manpower would be paid for no matter how many individuals are being watched.

With the surveillance infrastructure in place, all that law enforcement agents need to do is to issue a couple commands from a computer terminal, at which point, a government server will begin capturing a suspect's raw telephone, Internet and other traffic. Automated software can scan the contents of the calls and emails, and a summary report can be sent to an agent if there are any matches. The interception itself requires little to no direct supervision, and so it is just as easy to tap 1, 50 or 100 additional suspects.

C.   *The Problem With Free and Cheap Surveillance*

Telecommunication companies often act as a form of oversight for surveillance requests – primarily due to their fear of being sued for assisting with illegal wiretapping. In several past instances, companies have refused to comply with surveillance orders that they believed were

---

86. Posting of Andrew Appel to Freedom to Tinker, Eavesdropping as a Telecom Profit Center, http://freedom-to-tinker.com/blog/appel/eavesdropping-telecom-profit-center (Oct. 31, 2007, 10:47) ("In the end, it could be that the phone companies that cooperated with the NSA did so not for reasons of patriotism, or because their arms were twisted, but because the NSA came with a checkbook. Taking the NSA's money may be the only remaining profit center in bit-shipping.").

87. Posting of Steven Aftergood to Secrecy News, Implementing Domestic Intelligence Surveillance, http://www.fas.org/blog/secrecy/2007/10/implementing_domestic_intellig.html (Oct. 15, 2007) ("Upon lawful request and for a thousand dollars, Comcast, one of the nation's leading telecommunications companies, will intercept its customers' communications under the Foreign Intelligence Surveillance Act. The cost for performing any FISA surveillance 'requiring deployment of an intercept device' is $1,000.00 for the 'initial start-up fee (including the first month of intercept service),' according to a newly disclosed Comcast Handbook for Law Enforcement. Thereafter, the surveillance fee goes down to '$750.00 per month for each subsequent month in which the original [FISA] order or any extensions of the original order are active.'").

88. *DCS-3000 is the FBI's New Carnivore*, *supra* note 79 ("Over 80 percent of intercepts are now targeting wireless phones, though the fancy CALEA taps can cost as much as $2,600 for 30 days of spying . . . ."); Cox Communications, Notice to parties serving subpoenas on Cox Communications, http://www.cox.com/Policy/leainformation/default.asp. (last visited Oct. 29, 2009) ("To defer the cost to Cox of compliance, payment of the following minimum fees is required for all subpoena, court order and warrant requests . . . . Wiretap: **$3,500** for each 30 days—**$2,500** for each additional 30 days.") (emphasis added).

illegal.[89] Federal wiretapping laws outline specific civil liabilities for companies that provide customer information without meeting the appropriate legal requirements. This liability gives telecommunication companies a strong incentive to insist that the law is being followed. Thus, when wiretaps can be performed without any involvement of the telecommunications providers, consumers are robbed of this crucial additional layer of oversight, and must rely upon law enforcement and intelligence agencies to not abuse their access.

Another spillover benefit of the pay-for-surveillance model is that it creates a paper-trail.[90] That is, if the government is billed for each wiretap it requests, a billing record will be generated detailing the date that tap began, ended, the number or customer tapped, as well as the cost of this service. At least two copies of this will be generated, one for the ISP and another sent to the investigating agency. This paper trail provides a wealth of data for oversight bodies, and the fear of creating such a paper trail may dissuade investigators from initiating surveillance without the appropriate evidence.

Finally, per-transaction-billing based surveillance brings the benefit of scarcity. That is, given a fixed size budget, and a practically endless number of possible suspects, government agents are forced to prioritize their surveillance efforts. This provides a strong incentive for them to

---

89. *See, e.g.*, Ellen Nakashima & Dan Eggen, *Former CEO Says U.S. Punished Phone Firm; Qwest Feared NSA Plan Was Illegal, Filing Says*, WASH. POST, Oct. 13, 2007, http://www.washingtonpost.com/wp-dyn/content/article/2007/10/12/AR2007101202485. html ("In May 2006, USA Today reported that the NSA had been secretly collecting the phone-call records of tens of millions of Americans, using data provided by major telecom firms. Qwest, it reported, declined to participate because of fears that the program lacked legal standing. . . . '[Qwest's CEO] made inquiry as to whether a warrant or other legal process had been secured in support of that request . . . . When he learned that no such authority had been granted and that there was a disinclination on the part of the authorities to use any legal process, including the Special Court which had been established to handle such matters, [he] concluded that these requests violated the privacy requirements of the Telecommunications Act.'"); James Risen & Eric Lichtblau, *Court Affirms Wiretapping Without Warrants*, N.Y. TIMES, Jan. 15, 2009 at A13, *available at* http://www.nytimes.com/2009/01/16/washington/16fisa.html ("In a rare public ruling, a secret federal appeals court has said telecommunications companies must cooperate with the government to intercept international phone calls and e-mail of American citizens suspected of being spies or terrorists. The ruling came in a case involving an unidentified company's challenge to 2007 legislation that expanded the president's legal power to conduct wiretapping without warrants for intelligence purposes.").

90. Gidari, *supra* note 5, at 557 ("Compensation generally equals sunshine and transparency. Currently, if service providers are not paid to implement wiretap solutions, if they are not paid to produce thousands and thousands of records, there is no audit trail. And if there is no audit trail, there is no visibility and transparency into how the money is spent, and you do not know what capabilities are actually being acquired. . . . When I can follow the money, I know how much of something is being consumed—how many wiretaps, how many pen registers, how many customer records. Couple that with reporting, and at least you have the opportunity to look at and know about what is going on. Because right now, you do not know.").

focus on investigations likely to bear fruit, as well as to avoid "fishing expeditions."

Even in the event that a provider charges for surveillance assistance, this situation is still much better for government agents than in the pre-digital days. Sending agents out to monitor a home or trail a suspect consumes significantly more resources than paying an ISP $1000 to turn on a wiretap or locate a mobile phone. It is also much safer.

Obtaining and serving a warrant upon a suspect, raiding her home, and seizing her computers not only consumes valuable agent hours,[91] but it places agents in harm's way. A suspect could be armed, or have protected his home with booby traps. While law enforcement agencies might mitigate this risk through the use of SWAT style tactics,[92] the risk to their own is still there. This risk of physical harm provides an additional and highly personal incentive for officers to limit such searches. However, now that cloud computing companies are able to provide law enforcement with the documents that would have once required an armed raid, this risk of physical harm is gone, and with it, whatever disincentives for over-reaching it provided.

D.   Cloud Providers and the Third-Party Doctrine

The Fourth Amendment guarantees all Americans a measure of control around their bodies and possessions that the government cannot enter or search without reasonable cause. Thus, a person's diary, personal letters, and other such property are normally provided with constitutional protection. Americans have become used to these rights, and often take for granted that private matters are usually kept private. Unfortunately, as society has shifted to communicating and working online, these constitutional protections have been left behind.

Fourth Amendment protections against unreasonable search and seizure depend upon a person's reasonable expectation of privacy. Unfortunately for users of Internet based services, existing case law does little to protect their digital documents and papers which are now increasingly being stored on the remote servers of third parties.

---

91. William J. Stuntz, *The Distribution of Fourth Amendment Privacy*, 67 GEO. WASH. L. REV. 1265, 1275 (1999) ("Warrants are costly to the police: they require both paperwork and hours hanging around a courthouse waiting to see the magistrate. . . . Both the warrant and probable cause requirements, then, make house searches considerably more expensive for police than those searches would be absent those requirements. The rules function as a tax, payable in police time rather than money. When a police officer decides to search a house or apartment, he must first spend several hours performing tasks that the law says are prerequisites to such a search. . . . [I]f you tax a given kind of behavior, you will probably see less of it.").

92. *See generally* RADLEY BALKO, OVERKILL: THE RISE OF PARAMILITARY POLICE RAIDS IN AMERICA (2006), *available at* http://www.cato.org/pubs/wtpapers/balko_whitepaper_2006.pdf.

The cause of this departure from the Fourth Amendment is the third-party doctrine, which establishes that people have no expectation of privacy in the documents they share with others.[93] Rather than revisit *Smith v. Maryland* and *United States v. Miller* at length, a single quote from the Supreme Court should be enough:

> [T]he Fourth Amendment does not prohibit the obtaining of information revealed to a third party and conveyed by him to Government authorizes, even if the information is revealed on the assumption that it will be used only for a limited purpose and the confidence placed in the third party will not be betrayed.[94]

"The third party doctrine is the Fourth Amendment rule that scholars love to hate. It is . . . widely criticized as profoundly misguided. Decisions applying the doctrine 'top[] the chart of [the] most-criticized Fourth Amendment cases.'"[95] However, for the purposes of this article, it can be summarized by stating that online service providers can be compelled to reveal their customers' private documents with a mere subpoena.[96] As such, the government is not required to obtain a search warrant,[97] demonstrate probable cause[98] or go before a judge.

While the third party doctrine is certainly the current tool of choice for the government's evisceration of the Fourth Amendment, is not completely to blame for the lack of privacy online. The real and often overlooked threat to end-user privacy is not this legal rule, but the industry-wide practice of storing customers' data in plain text, forgoing any form of encryption. Simply put, if encryption were used to protect users' stored data, the third party doctrine would for the most part be

---

93. *See* United States v. Miller, 425 U.S. 435 (1976); Smith v. Maryland, 442 U.S. 735 (1979).

94. *Miller*, 425 U.S. at 443.

95. Orin S. Kerr, *The Case for the Third-Party Doctrine*, 107 MICH. L. REV. 561, 563 (2009) (quoting Clark D. Cunningham, *A Linguistic Analysis of the Meanings of 'Search' in the Fourth Amendment: A Search for Common Sense*, 73 IOWA L. REV. 541, 580 (1988)).

96. *See, e.g.*, Gonzales v. Google Inc., 234 F.R.D. 674 (N.D. Cal. 2006).

97. Orin S. Kerr, *A User's Guide to the Stored Communications Act, and a Legislator's Guide to Amending It*, 72 GEO. WASH. L. REV. 1208, 1211 (2004) ("Because ISPs are third-party corporate entities, investigators do not ordinarily search the servers of ISPs directly. Investigators do not break down the ISP's door and start looking for the files themselves. Instead, they obtain a court order compelling the network provider to disclose the information to the government. This is important under existing Fourth Amendment doctrine: the Fourth Amendment generally allows the government to issue a grand jury subpoena compelling the disclosure of information and property, even if it is protected by a Fourth Amendment 'reasonable expectation of privacy.'").

98. *Id.* ("When the government obtains a court order such as a subpoena that requires the recipient of the order to turn over evidence to the government within a specified period of time, the order will generally comply with the Fourth Amendment if it seeks relevant information and is not overbroad. Such circumstances do not require probable cause.").

moot.

Thus, this article must now analyze the failure of the market to provide end-users with this crucial protection from warrantless government intrusion.

E.   Why We Don't Have Widespread Encrypted Cloud Services

First, a few definitions for different kinds of encryption: Network encryption (typically HTTPS) is used to protect data as it is transmitted from the client to a server. Data encryption is used to protect the data once it is in storage. Within this latter category, there are two particular styles of use: data encryption in which the service provider knows the encryption key, and data encryption in which the service provider does not know the encryption key.

Network encryption only protects data in transit, and so the use of this technology does nothing to protect users' data from a subpoena. Likewise, if a cloud provider has both the user's data, and the key used to encrypt it, the company can be compelled to produce both. The only real protection from government intrusion comes with the encryption of data with a key that only the user knows.

As this article will now argue, there are two main reasons why most cloud providers have not gone down this path.

1.   A Lack of Perceived Consumer Demand for Encryption of Stored Data

As explained earlier, network encryption can protect data from passive adversaries who try to capture data as it is transmitted from the customer's computer to the cloud provider. Encryption of the data in storage protects against a different set of threats. If the service provider knows the encryption key, the user still gains significant protection from data loss risks—that is, misplaced backup tapes and stolen laptops, providing the company is not storing the encryption key on the same media as the encrypted user data.

Data encryption with a key that is private to the user protects against a very specific set of threats—including so called insider attacks, where an employee "peeps" at customer data,[99] and legally compelled

---

99. *See generally* Peter P. Swire, *Peeping*, BERKLEY TECH. L.J, (forthcoming 2009), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1418091. Facebook serves as a classic example of this privacy threat:

> Valleywag kept hearing reports that Facebook employees had violated their users' privacy in a number of ways. The claimed abuses varied: Looking at restricted profiles to check out dates. Seeing which profiles a user had viewed. And, in one case, allegedly logging onto a user's account, changing her profile picture to a graphic image, and sending faked messages. . . . Facebook may have sophisticated

disclosure. These are two potential risk scenarios which companies have little to no incentive to publicize. Simply put, service providers likely prefer that their customers not know these risks exist.

While it is little known to most consumers, government requests to Web 2.0 companies have become a routine part of business.[100] Practically all cloud computing providers have dedicated legal compliance departments,[101] some open 24 hours per day, through which law enforcement agents can obtain emails, logs of search requests, and other stored customer data through a formalized process.[102] While Google has widely publicized its initial refusal to deliver search records in response to a request by the U.S. Department of Justice in 2006, it has been far less willing to discuss the huge number of subpoenas it receives per year, to which it does comply and delivers its customers' data to law enforcement agencies.[103] Furthermore, the company's CEO has publicly stated that

---

privacy controls. But they don't appear to be deployed at headquarters.

Owen Thomas, *Why Facebook Employees are Profiling Users*, VALLEYWAG, Oct. 29, 2007, http://valleywag.gawker.com/316469/why-facebook-employees-are-profiling-users.   Another breach was possibly more widespread:

> There was a master password that granted Facebook employees access to any account, if they knew it. The interviewee describes a password that would allow a Facebook employee to view anyone's profile simply by typing in their unique user ID and the password (the password itself was a variation on 'Chuck Norris'). This password was used primarily for engineering purposes, but other employees could find it "if they knew where to look". To use the password, you would have to be accessing Facebook from the company's ISP (in other words, there was no risk of it leaking to the web at large). The employee says that this power has been abused on at least two occasions, explaining that she is aware of two relating [sic] firings.

Jason Kincaid, *Purported Interview With Facebook Employee Details Use of 'Master Password,'* TECHCRUNCH, Jan. 11, 2010, http://techcrunch.com/2010/01/11/rumpus-facebook-privacy/

    100. *See, e.g.*, Saul Hansel, *Online Trail Can Lead to Court*, N.Y. TIMES, Feb. 4, 2006, at C6 ("Who is sending threatening e-mail to a teenager? Who is saying disparaging things about a company on an Internet message board? Who is communicating online with a suspected drug dealer? These questions, and many more like them, are asked every day of the companies that provide Internet service and run Web sites. And even though these companies promise to protect the privacy of their users, they routinely hand over the most intimate information in response to legal demands from criminal investigators and lawyers fighting civil cases.").

    101. For a list of the legal compliance departments at hundreds of phone/Internet companies, see: Search.org, ISP List, http://www.search.org/programs/hightech/isp/ (last visited Oct. 28, 2009).

    102. Hansel, *supra* note 100 ("Requests for information have become so common that most big Internet companies, as well as telephone companies, have a formal process for what is often called subpoena management. Most of the information sought about users is basic, but very personal: their names, where they live, when they were last online—and, if a court issues a search warrant, what they are writing and reading in their e-mail.").

    103. Posting of Ryan Singel to Threat Level Blog, Google To Anonymize Data— Updated, http://www.wired.com/threatlevel/2007/03/google_to_anony/ (Mar. 14, 2007, 13:45 EST) ("The new policy also shouldn't affect many investigations, [Google Deputy Counsel Nicole] Wong said, since the two year time limit 'seems to be at the outer edge of what police want.' Mostly police are interested in logs that are a day or two old, according to Wong. Google still refuses to disclose how often their logs are subpoenaed, even in cases where they

one of the main reasons the company retains detailed data on consumers' online activity is to assist the government with lawful investigations.[104] However, Google is not alone in not wishing to discuss the frequency of government requests—there seems to be an industry-wide policy of silence.[105] Only Facebook and AOL have broken the silence to disclose even approximate numbers—10-20 per day and 1000 requests per month respectively.[106] Of course, these numbers only reveal a portion of the government's quiet collection of private data—as requests made in response to FBI National Security Letters and FISA court orders are typically gagged, and thus never disclosed, even in aggregate form.

It would be wrong to assume that consumers do not care about the ease with which their private information can be disclosed. For example, in early 2009, Sweden passed a new law requiring ISPs to hand over

---

are free to do so.") (alteration in original); Declan McCullagh, *How Safe is Instant Messaging? A Security and Privacy Survey*, CNET NEWS, June 9, 2008, http://news.cnet.com/8301-13578_3-9962106-38.html ("As a matter of policy, we do not comment on the nature or substance of law enforcement requests to Google.") (quoting Google's response to the question "Have you ever received a subpoena, court order or other law enforcement request asking you to turn over information about a user's IM account?").

104. Interview by Robert Siegel with Eric Schmidt, CEO, Google (Oct. 2, 2009), *available at* http://www.npr.org/templates/story/story.php?storyId=113450803 ("[T]he reason we keep [search engine data] for any length of time is one, we actually need it to make our algorithms better but more importantly, there is a legitimate case of the government, or particularly, the police function or so forth, wanting, with a federal subpoena and so forth—being able to get access to that information.").

105. Microsoft responded similarly:

> We do not comment on specific requests from the government. Microsoft is committed to protecting the privacy of our customers and complies with all applicable privacy laws. In particular, the Electronic Communications Privacy Act ("ECPA") protects customer records and the communications of customers of online services. As set forth above, however, Microsoft does not maintain records about our customers' use of the IM service and would have no information to provide in response to a request from law enforcement.

McCullagh, *supra* note 103 (quoting Microsoft's response to the question "Have you ever received a subpoena, court order or other law enforcement request asking you to turn over information about a user's IM account?"). And Yahoo also responded similarly: "Given the sensitive nature of this area and the potential negative impact on the investigative capabilities of public safety agencies, Yahoo does not discuss the details of law enforcement compliance. Yahoo responds to law enforcement in compliance with all applicable laws." *Id.* (quoting Yahoo's response to the question "Have you ever received a subpoena, court order or other law enforcement request asking you to perform a live interception or wiretap, meaning the contents of your users' communications would be instantly forwarded to law enforcement?").

106. Nick Summers, *Walking the Cyberbeat*, NEWSWEEK, May 18, 2009, *available at* http://www.newsweek.com/id/195621 ("[Facebook] says it tends to cooperate fully and, for the most part, users aren't aware of the 10 to 20 police requests the site gets each day."); Hansel, *supra* note 100 ("AOL, for example, has more than a dozen people, including several former prosecutors, handling the nearly 1,000 requests it receives each month for information in criminal and civil cases. . . . AOL says that only 30 of the 1,000 monthly requests it receives are for civil cases, and that it initially rejects about 90 percent of those, arguing that they are overly broad or that the litigants lack proper jurisdiction. About half of those rejected are resubmitted, on narrower grounds.").

customers' information to intellectual property holders investigating piracy. Swedish Internet traffic dropped by over thirty percent starting the day that the new law came into effect.[107] This clear demonstration of consumers' privacy fears then lead to competition in the market for privacy-preserving services. Within weeks, three of Sweden's ISPs had announced new policies in which they would not retain any information linking IP address information to particular customers. Explaining the motivation for the change in policy, the CEO of one of the country's largest ISPs said, "it's a strong wish from our customers, so we decided not to store information on customers' IP numbers."[108]

There is one significant difference between most cloud computing providers and the Swedish ISPs who responded to the market demand for privacy: Money. The Swedish ISPs' primary source of revenue is the monthly fees, which they charge their customers for broadband Internet services. However, the cloud computing providers generally provide their services for free, and make their money by collecting large amounts of consumer data, which they then monetize through the sale of highly targeted advertising. While the ISPs can easily afford to do without detailed consumer data, the cloud computing providers cannot, at least as their business models currently stand. Their profit margins depend upon their ability to convince customers to trust them with *more* private data, not less.

2.   Business Models that Depend on Advertising and Data Mining

It is exceedingly difficult to monetize a data set that you cannot look at. Google's popular Gmail service scans the text of individual emails, and algorithmically displays relevant advertisements next to the email. When a user receives an email from a friend relating to vacation plans, Google can display an advertisement for hotels near to the destination, rental cars or travel insurance. If those emails are encrypted with a key not known to Google, the company is unable to scan the contents and display related advertising. Sure, the company can display generic advertisements unrelated to the user's communications contents, but these will be far less profitable.[109]

---

107. *Piracy Law Cuts Internet Traffic*, BBC NEWS, Apr. 2, 2009, http://news.bbc.co.uk/2/hi/technology/7978853.stm ("The new law, which is based on the European Union's Intellectual Property Rights Enforcement Directive (IPRED), allows copyright holders to obtain a court order forcing ISPs to provide the IP addresses identifying which computers have been sharing copyrighted material. . . . [T]raffic fell from an average of 120Gbps to 80Gbps on the day the new law came into effect.").

108. Mats Lewan, *Swedish ISPs Vow to Erase users' Traffic Data*, CNET NEWS, Apr. 28, 2009, http://news.cnet.com/8301-1023_3-10229618-93.html.

109. Jun Yan et al., *How much can Behavioral Targeting Help Online Advertising?*, 18th

Google's Docs service, Microsoft's Hotmail, Adobe's Photoshop Express, Facebook, and MySpace are all made available for free. Google provides its users with gigabytes of storage space, yet doesn't charge a penny for the service. These companies are not charities, and the data centers filled with millions of servers required to provide these services cost real money. The companies must be able to pay for their development and operating costs, and then return a profit to their shareholders. Rather than charge their users a fee, the firms have opted to monetize their user's private data. As a result, any move to protect this data will directly impact the companies' ability to monetize it and thus turn a profit.[110] Barring some revolutionary developments from the cryptographic research community, advertising based business models are fundamentally incompatible with private key encrypted online data storage services.

Advertising is not the only way to pay for cloud computing. Over the past few years, Google has convinced 500,000 businesses and organizations to switch to its "Apps for Domains" product, in which it provides Mail, Docs, Spreadsheets, and other cloud-based services to companies, universities, and governments. Google does not mine these corporate customers' email for advertising purposes, and instead charges $50 per user per year, which is more than enough to pay the costs of operating the service and make a profit. Likewise, Microsoft offers its Office Live based suite to corporate customers wishing to pay a per user fee. If customers, particularly those in the corporate and government space were willing to pay for the higher development and computational costs required for encryption, it is quite likely that companies like Google and Microsoft might compete to meet the market demand.

F.   Encryption in the Cloud

Cloud-based services do not, by their very nature, have to put the privacy of their users at risk. Consider, as an example, the Weave software add-on for the Firefox web browser.[111] This tool enables users to keep their bookmarks, browsing history, saved passwords, and cookies synchronized across multiple computers. The tool even supports the

---

INT'L CONFERENCE ON WORLD WIDE WEB 261, 261 (2009), *available at* http://www2009.eprints.org/27/1/p261.pdf ("Click-Through Rate (CTR) of an ad can be averagely improved as high as 670% by properly segmenting users for behavioral targeted advertising . . . .").

110. Christopher Soghoian, *The Problem of Anonymous Vanity Searches*, 3 I/S: J.L. & POL'Y INFO. SOC'Y 299, 303 (2007) ("If Google can build a higher–quality data set of customer information, it can charge more per advertisement, while also gaining a significant market advantage over the other search engines.").

111. Mozilla.com, Welcome to Weave, http://mozillalabs.com/weave/ (last visited Oct. 31, 2009).

Firefox mobile phone browser, allowing users to bookmark a web page at home and then later view it while commuting to work from their phone.

Like all cloud services, The Mozilla Corporation (which makes Firefox and Weave) is able to provide this instant, worldwide access by allowing users to store their own data on Mozilla's servers. However, Mozilla baked privacy into the product at the design stages, stating that a key principle of the project that "users own their data, and have complete control over its use. Users need to explicitly enable third parties to access their data."[112] As a result, the data that Weave users store on Mozilla's servers is encrypted with a key created by that user, which is not shared with anyone else. Mozilla simply provides the cloud-based storage, but is unable to peek at its users' stored passwords and browsing history. In the event that law enforcement or intelligence agencies seek to compel Mozilla to share its users' data, the company can confidently hand over the encrypted files with the knowledge that the data is complete gibberish to everyone but its owner.

Mozilla has not attempted to monetize the Weave service, which is perhaps why it has been able to put user privacy first. It has even provided an open source Weave server, so that other groups and companies can provide their own cloud-based storage for Weave users.

Building on Weave, imagine a situation in which Google, Microsoft, and the other providers follow Mozilla's example, and build strong encryption into their own services, such that only users will have the ability to decrypt their own data.

In this hypothetical scenario, Google's Docs word processor will store each user's files in an encrypted form on Google's vast array of servers. When the user loads the Google Docs application in their web browser, it will prompt the user for her password. The web application will then request copies of the most recent documents from Google's servers, download them, and then decrypt these files locally in the browser. As the user makes changes to the documents, the modifications will be encrypted, and then transmitted to Google's servers. Users will still be able to access their own documents from any computer around the world, yet the documents will be safe from the prying eyes of governments, divorce lawyers, and even inquisitive rogue Google employees.

Such a scenario is not beyond the realm of imagination. As Mozilla's development of the Weave product has demonstrated, it is possible to build privacy into the cloud. Were the cloud computing industry to follow Mozilla's example and encrypt all user data, the warrant-free access of individual's private data made possible by the third

---

112. Mozilla Wiki, Overview of OAuth for Weave, https://wiki.mozilla.org/Labs/Weave/OAuth (last visited Jan. 23, 2010).

party doctrine would become a thing of the past.[113]

G.   *How Encryption Will Change the Status Quo*

A move to encrypted cloud-based services will likely lead to a significant reduction in the ease with which law enforcement agents can obtain the private files of suspects. I consider this to be a feature, not a bug. Simply put, cloud computing and the online storage of data by third parties has made law enforcement far too cheap. It is time for a market adjustment.

Nevertheless, the law enforcement and intelligence communities will likely argue that without the ability to force service providers to reveal their customer's communications, government agents will be unable to catch pedophiles and terrorists.[114]

While I certainly wish to roll back the effectiveness, scale and extreme low cost at which the government can currently engage in surveillance, I also recognize that there is a legitimate need to investigate suspects. Luckily, even with the widespread use of encryption, there is still a way for government agents to get access to data: the black bag job, a search method already in widespread use.[115]

As noted earlier in this article, in the days before easy wiretaps at

---

113. At least one of the major cloud computing providers is already engaged in research efforts focused on moving towards an encrypted cloud. *See generally* SENY KAMARA & KRISTIN   LAUTER,   CRYPTOGRAPHIC   CLOUD   STORAGE   (2010), http://research.microsoft.com/pubs/112576/crypto-cloud.pdf.

114. *See, e.g.*, Electronic Frontier Foundation, EFF Quotes Collection: 19.6, http://w2.eff.org/Misc/EFF/?f=quotes.eff.txt (last visited Oct. 31, 2009) ("I doubt that Congress would pass on the opportunity to make sure that our children were safe from terrorists.") (quoting testimony of Louis Freeh, Dir., FBI, to the House of Representatives hearing on the FBI's Digital Telephony Bill on Sept. 13, 1994); Declan McCullagh, *Gonzales Pressures ISPs on Data Retention*, CNET NEWS, May 26, 2006, http://news.cnet.com/2100-1028_3-6077654.html ("In a private meeting with industry representatives, [Attorney General] Gonzales, [FBI Director] Mueller and other senior members of the Justice Department said Internet service providers should retain subscriber information and network data for two years . . . . During Friday's meeting, Justice Department officials passed around pixellated (that is, slightly obscured) photographs of child pornography to emphasize the lurid nature of the crimes police are trying to prevent . . . .").

115. "A total of 763 [delayed notice search] warrant requests and 528 requests for [delayed notice] extensions were reported for the fiscal year ended September 30, 2008. . . . Drug offenses were specified in 65 percent of applications reported, followed by fraud (5 percent), weapons, and tax offenses (4 percent each)." DIR. OF THE ADMIN. OFFICE OF THE U. S. COURTS,   APPLICATIONS   FOR   DELAYED-NOTICE   SEARCH   WARRANTS   AND EXTENSIONS,   at   1-2   (2009),   *available   at*   http://big.assets.huffingtonpost.com/ SneakAndPeakReport.pdf. This number does not include most covert searches conducted as part of terrorism and intelligence investigations, as "surveillance methods are 'generally covert altogether,' and do not use sneak-and-peek warrants." Posting of Daniel Tencer to The Raw Story, Feingold: 'Sneak-and-Peak' Being Used for Regular Crimes, http://rawstory.com/blog/2009/09/patriot-act-regular-crimes/ (describing testimony of Assistant Attorney General David Kris before the Senate Judiciary Committee on September 23, 2009).

the phone company, law enforcement agencies had to send an agent out to tap the line at the suspect's home, or perhaps scale a nearby telephone pole. The widespread use of encryption brings us back to a form of surveillance dependent upon manual labor. The *Scarfo* case provides a fantastic example of this, in which a suspect's use of disk encryption was defeated by the FBI. A team of agents snuck into Scarfo's home, planted microphones and other recording devices in his computer, which then captured a copy of his password as he typed it on the keyboard.[116] No matter how strong the encryption, the human is always the weakest link, and the black bag job exploits this.

What this article proposes is not the end to the lawful acquisition of investigative data, merely that law enforcement no longer be able to deputize service providers into quietly disclosing their customers' data. If a suspect is important enough, let the police dedicate the significant manpower to break into her home in order to install bugs. Given the finite limit to the financial and human resources available to law enforcement agencies, such a change in the balance of power, by raising the effective cost of such surveillance, would force investigators to prioritize their targets, and shy away from fishing expeditions.[117]

Furthermore, such a dependence on black bag jobs would also bring a further (and significant) benefit long sought by privacy activists: The return of the Fourth Amendment. If police need to break into a suspect's home in order to try and install a password-stealing bug, they must first obtain a search warrant, and thus find themselves firmly back in the familiar domain of the Fourth Amendment. This would lead to at least some judicial oversight of investigations, something that is almost entirely absent under the current subpoena standard.

As much as a move to widespread encryption would cheer up privacy activists, encryption technology is not a magic bullet. As this article will now explain, even if cloud computing providers deploy encryption technology, the government retains an extremely powerful trump card: the ability to force service providers to insert covert back doors into their own products.

---

116. United States v. Scarfo, 180 F. Supp. 2d 572, 574 (D.N.J. 2001).

117. Stuntz, *supra* note 91, at 1275–6, 1278–9 ("Where there are more crimes than the police can investigate, the police must, by definition, choose *which* crimes to investigate. Anything that makes investigating some crimes more expensive will tend to drive police toward other crimes, in the same way that making airplane travel more expensive will drive passengers to trains or cars. . . . Some police tactics are wholly unregulated, some are regulated lightly, and a few, like house searches, are regulated fairly heavily. In a world like that, a world where the law taxes some kinds of policing more than others, the likely substitutions will occur within policing, not outside it, as the police shift time and energy away from more expensive (because more highly taxed) tactics and toward cheaper ones.").

IV. COMPANIES CAN BE FORCED TO TURN AGAINST THEIR CUSTOMERS

When consumers purchase technology, it is typically because they want to perform some task or function. It is exceedingly unlikely that purchases are made with the goal of making it easier for the government to spy on the purchaser. However, firms are now regularly compelled to modify their products in order to facilitate the government's interest in surveillance and search. Consumers are essentially subsidizing the government's intrusions into their own private records, and in the vast majority of cases, the consumer never knows it.

Consumers have significantly reduced privacy rights when they are spied upon with their own devices and software. For example, while government agents are required to first obtain a warrant in order to use a GPS tracking device that they have covertly placed on a person or their vehicle to track their moments on private property,[118] that same location information can be obtained from the suspect's cellular phone provider with a mere subpoena. Furthermore, even if a company attempts to build privacy-protections into its products, these can be quietly neutralized. Technology providers are frequently forced to circumvent the privacy protections they have built into their products and insert backdoors—adding new features, the sole purpose of which is to violate the privacy of the customer. I now present a few examples of this.

A. *The FBI's Magic Lantern / Computer and Internet Protocol Address Verifier (CIPAV)*

In 2001, it was revealed that the FBI had developed a malicious software suite for the purpose of stealing information from suspects' computers.[119] The "Magic Lantern" tool (since renamed the Computer and Internet Protocol Address Verifier or CIPAV) has much in common with typical computer viruses—namely, the FBI relies upon un-patched vulnerabilities in a suspect's computer to gain unauthorized access and then covertly installs their data evidence gathering software. However, rather than sending a victim's private documents back to an identity thief in Eastern Europe, the personal files are instead sent to a FBI computer in Quantico, Virginia.[120]

---

118. 18 U.S.C. § 3117. (2006). *See also* JEFF WELTY, GPS TRACKING DEVICES AND THE FOURTH AMENDMENT (Oct. 2008), http://www.sog.unc.edu/programs/crimlaw/ GPS%20Tracking%20Devices%20and%20the%20Fourth%20Amendment.pdf.

119. Nat Hentoff, *The FBI's Magic Lantern*, THE VILLAGE VOICE, May 28, 2002, http://www.villagevoice.com/2002-05-28/news/the-fbi-s-magic-lantern/1.

120. Kevin Poulsen, *FBI's Secret Spyware Tracks Down Teen Who Made Bomb Threats*, WIRED, July 18, 2007, http://www.wired.com/politics/law/news/2007/07/fbi_spyware ("The full capabilities of the FBI's 'computer and internet protocol address verifier' are closely

All available information on the use of CIPAV seems to indicate that the tool is only used after law enforcement officers have obtained a search warrant. However, the revelation of the tool's existence did lead to a media firestorm when Network Associates reportedly told the Associated Press that the company would be willing to modify its popular McAfee Anti-Virus software suite to ignore the FBI's spyware tool.[121] That is, customers who purchased the anti-virus suite would not be warned if their computers were infected by an FBI-written virus.

In a 2007 survey of 13 anti-spyware vendors, all of the companies stated that their policy was to detect all forms of spyware, including software made by the government.[122] However, when asked if they had ever received a court order requiring the white-listing of government spyware, both Microsoft and Network Associates declined to comment.[123]

B.   Mobile Phones as Roving Bugs

News reports in 2006 revealed that the FBI is able to remotely enable the microphones of mobile phones. Using this technique, described as a 'roving bug' in court documents, the FBI remotely instructs a mobile phone to turn on its microphone, and then silently transmits the recorded audio back to the government's remote servers, all

---

guarded secrets, but here's some of the data the malware collects from a computer immediately after infiltrating it, according to a bureau affidavit acquired by Wired News: IP address[;] MAC address of ethernet cards[;] A list of open TCP and UDP ports[;] A list of running programs[;] The operating system type, version and serial number[;] The default internet browser and version[;] The registered user of the operating system, and registered company name, if any[;] The current logged-in user name[;] The last visited URL. . . . All that information is sent over the internet to an FBI computer in Virginia, likely located at the FBI's technical laboratory in Quantico.").

121. Declan McCullagh, *'Lantern' Backdoor Flap Rages*, WIRED, Nov. 27, 2001, http://www.wired.com/politics/law/news/2001/11/48648 ("Network Associates has been snared in a web of accusations over whether it will place backdoors for the U.S. government in its security software. . . . An Associated Press article then reported that 'at least one antivirus software company, McAfee Corp., contacted the FBI . . . to ensure its software wouldn't inadvertently detect the bureau's snooping software and alert a criminal suspect.'").

122. Declan McCullagh & Anne Broache, *Will Security Firms Detect Police Spyware?*, CNET NEWS, July 17, 2007, at 1, http://news.cnet.com/Will-security-firms-detect-police-spyware/2100-7348_3-6197020.html ("Some companies that responded to the survey were vehemently pro-privacy. 'Our customers are paying us for a service, to protect them from all forms of malicious code,' said Marc Maiffret, eEye Digital Security's co-founder and chief technology officer. 'It is not up to us to do law enforcement's job for them so we do not, and will not, make any exceptions for law enforcement malware or other tools.'").

123. *Id.* at 2 ("'Microsoft frequently has confidential conversations with both customers and government agencies and does not comment on those conversations,' a company representative said. Of the 13 companies surveyed, McAfee was the other company that declined to answer. . . . Cris Paden, Symantec's manger of corporate public relations, initially declined to reply. 'There are legitimate reasons for not giving blanket guarantees—one of those is a court order,' he said at first. 'There are extenuating circumstances and gray issues.'").

without notifying the user.[124] The feature has been used against two alleged mafia kingpins, who had been careful to avoid saying anything incriminating when making calls using their mobile phones.[125] They were not so careful when they believed that the phones were off.

While it is unclear how the government is able to remotely enable the microphones, most experts point to a software update of some kind.[126] If an update is used, it is also unclear how the software is being covertly installed onto the suspect's phone—that is, if the government is exploiting an un-patched vulnerability in the phone's software,[127] or if government agencies have been able to obtain the assistance of wireless phone companies or the device manufacturers themselves—most of whom have refused to discuss the matter.[128]

C.   *In-Car Navigation Systems*

In 2003, the Ninth Circuit Court of Appeals ruled that providers of in-car navigational/GPS services can be forced to secretly enable the microphones in a suspect's car without the person's knowledge and remotely wiretap them.[129]

This case relates to in-car navigation systems with built in cellular

---

124. Declan McCullagh, *FBI Taps Cell Phone Mic as Eavesdropping Tool*, ZDNET, Dec. 1, 2006, http://news.zdnet.com/2100-1035_22-150467.html ("The FBI appears to have begun using a novel form of electronic surveillance in criminal investigations: remotely activating a mobile phone's microphone and using it to eavesdrop on nearby conversations. . . . Nextel and Samsung handsets and the Motorola Razr are especially vulnerable to software downloads that activate their microphones, said James Atkinson, a counter-surveillance consultant who has worked closely with government agencies. 'They can be remotely accessed and made to transmit room audio all the time,' he said. 'You can do that without having physical access to the phone.'").

125. *Id.* ("Nextel cell phones owned by two alleged mobsters, John Ardito and his attorney Peter Peluso, were used by the FBI to listen in on nearby conversations. The FBI views Ardito as one of the most powerful men in the Genovese family, a major part of the national Mafia.").

126. *Id.* ("But other experts thought microphone activation is the more likely scenario, mostly because the battery in a tiny bug would not have lasted a year and because court documents say the bug works anywhere 'within the United States'—in other words, outside the range of a nearby FBI agent armed with a radio receiver. In addition, a paranoid Mafioso likely would be suspicious of any ploy to get him to hand over a cell phone so a bug could be planted. And Kolodner's affidavit seeking a court order lists Ardito's phone number, his 15-digit International Mobile Subscriber Identifier, and lists Nextel Communications as the service provider, all of which would be unnecessary if a physical bug were being planted.").

127. *See, e.g.,* Collin Mulliner & Charlie Miller, *Injecting SMS Messages into Smart Phones for Security Analysis*, 3rd USENIX WORKSHOP ON OFFENSIVE TECH. MONTREAL, CANADA (2009), http://www.usenix.org/events/woot09/tech/full_papers/mulliner.pdf.

128. McCullagh, *supra* note 124 ("Verizon Wireless said only that it 'works closely with law enforcement and public safety officials. When presented with legally authorized orders, we assist law enforcement in every way possible.' . . . A Motorola representative said that 'your best source in this case would be the FBI itself.' Cingular, T-Mobile, and the CTIA trade association did not immediately respond to requests for comment.").

129. The Company v. United States, 349 F.3d 1132, 1143 (9th Cir. 2003)

data service, and the government's attempt to turn these devices into roving bugs. These products generally enable a customer to press a button in their vehicle to call for help whenever they get lost; further safety functions include the ability to automatically call an ambulance whenever the car has an accident.[130] These devices are typically pre-installed by car manufacturers, who also install microphones in the vehicles—permitting the customer to speak to call center workers when their assistance is needed.

While there was little to be gained by wiretapping a customer's calls to the emergency response call center staff, the FBI took an interest in the microphones pre-installed in many luxury vehicles, and the cellular transmission capabilities of the in-car navigational systems. In this case, FBI agents sought to covertly enable microphones without the suspects' knowledge, and then use the existing cellular capabilities in the system to listen in on in-car conversations.[131]

The FBI agents obtained a valid intercept order from the district court directing "The Company"[132] to provide the necessary assistance to wiretap the suspects. In making its argument as to why it should not have to comply with the court's order, "The Company" cited the legislative history of the Communications Privacy Act of 1996, which it claimed prohibits wiretap orders that "require a company to actually accomplish or perform the wiretap" or where "wiretap activity take[s] place on . . . company premises."[133] The court dismissed this argument, contrasting between telephone wiretaps mentioned in the Congressional Record in which "law enforcement is familiar with the technology and needs only access to wires remote from the carrier's premises" and the in-car microphone example, where "the FBI cannot intercept

---

130. *Id.* at 1134 ("The System automatically contacts the Company if an airbag deploys or the vehicle's supplemental restraint system activates.").

131. *Id.* at 1135 ("Upon request by the FBI, the district court issued several ex parte orders pursuant to 18 U.S.C. § 2518(4), requiring the Company to assist in intercepting oral communications occurring in a certain vehicle equipped with the System.").

132. OnStar is the most well known of these in-car navigational services. While the identity of "The Company" who brought this case was never revealed by the court:

> Court records strongly point to OnStar's Texas-based competitor ATX Technologies, which makes the "Tele Aid" systems used in Mercedes vehicles: the description fits the Tele Aid systems, and the Dallas-based attorney listed as arguing the appeal is also representing ATX in unrelated civil litigation in Texas. ATX spokesman Gary Wallace said he couldn't immediately comment.

Posting of Kevin Poulsen to SecurityFocus, Court Limits In-Car FBI Spying, http://www.securityfocus.com/news/7491 (Nov. 19, 2003).

133. *The Company,* 349 F.3d at 1143 ("[Title III] should not be construed as authorizing issuance of an order for land line telephone company assistance which either requires a company to actually accomplish or perform the wiretap or requires that law enforcement wiretap activity take place on land line telephone company premises.") (quoting S. REP. NO. 99-541, at 29-30 (1986)).

communications in the vehicle without the Company's 'facilities [or] technical assistance.'"[134]

The court disagreed, stating that it believed that the FBI certainly has the legal authority to order firms to turn their own technology against their customers. However, the FBI's requests were still ruled to be invalid. Pointing to the "minimum of interference" language in 18 USC § 2518, the court stated that "[t]he obligation of private citizens to assist law enforcement, even if they are compensated for the immediate costs of doing so, has not extended to circumstances in which there is a complete disruption of a service they offer to a customer as part of their business . . . ."[135] Due to the fact that "The Company's" ability to provide services to customers under surveillance was severely restrained,[136] the court ruled that the FBI's order was improper.

While the Ninth Circuit's decision protected customer privacy in this particular case, the court left a clear path for compelled assistance with covert surveillance if doing so does not hinder a company's ability to provide service to its customers. If anything, this rather hollow victory for the privacy community was actually a win for the government.

D.   *TorrentSpy*

In 2006, TorrentSpy, a popular peer-to-peer filesharing search engine was taken to court by the Motion Picture Association of America (MPAA). TorrentSpy had pro-actively disabled the logging of any data on its visitors, so that if compelled to, it would be unable to provide any information identifying its users. The company had also inserted clear

---

134. *Id.* at 1144 ("In contrast to standard land line wiretaps, the FBI cannot intercept communications in the vehicle without the Company's 'facilities [or] technical assistance.' Since such hands-on assistance is necessary, assistance may be mandated by an order under § 2518(4). *Cf.* S.Rep. No. 99-541, at 29 (recognizing that cellular service providers allow law enforcement to use their premises and that Congress did not intend to alter this arrangement with any of its 1986 amendments to title III).").

135. *Id.* at 1145.

136. *Id.* at 1146 ("In this case, FBI surveillance completely disabled the monitored car's System. The only function that worked in some form was the emergency button or automatic emergency response signal. These emergency features, however, were severely hampered by the surveillance: Pressing the emergency button and activation of the car's airbags, instead of automatically contacting the Company, would simply emit a tone over the already open phone line. No one at the Company was likely to be monitoring the call at such a time, as the call was transferred to the FBI once received. There is no assurance that the FBI would be monitoring the call at the time the tone was transmitted; indeed, the minimization requirements . . . preclude the FBI from listening in to conversations unrelated to the purpose of the surveillance. Also, the FBI, however well-intentioned, is not in the business of providing emergency road services, and might well have better things to do when listening in than respond with such services to the electronic signal sent over the line. The result was that the Company could no longer supply any of the various services it had promised its customer, including assurance of response in an emergency.").

language in its privacy policy to inform its users that it would not monitor their activity without their consent.[137]

In May of 2007, the MPAA convinced a federal judge to force TorrentSpy to enable logging on its servers—that is, to modify the code running on its servers in order to capture IP address information on its visitors. The judge relied upon the fact that the IP address information is available in computer memory, if just for a few seconds, as evidence that the information is "stored" and thus the company could be compelled to store it.[138]

Demonstrating a level of *chutzpah* common amongst those in the BitTorrent business,[139] TorrentSpy thumbed its nose at the judge's order, and simply blocked all U.S. visitors from accessing the site,[140] citing an "uncertain legal climate in the US regarding user privacy and an apparent tension between US and European Union privacy laws."[141]

E.   Hushmail

Since 1999, Hush Communications, a Canadian technology company, has offered consumers a free web-based encrypted email service.[142] In contrast to the free email solutions provided by Microsoft's Hotmail and Yahoo, Hush Communication's Hushmail product enables users to compose, transmit and receive encrypted email using an encryption key only known to the user. By using this service, a user can securely communicate with another Hushmail user, or one of the hundreds of thousands of existing users of OpenPGP compatible encryption tools.

While Hushmail's own marketing materials promised users absolute privacy,[143] a drug-related court case proved otherwise. In 2007, Hush

---

137. TorrentSpy, TorrentSpy Privacy Policy, http://web.archive.org/web/20070410082408/http://www.torrentspy.com/privacy.asp (last visited Oct. 31, 2009). ("TorrentSpy.com will not collect any personal information about you except when you specifically and knowingly provide such information.").

138. Eric Bangeman, *Judge: TorrentSpy Must Preserve Data in RAM*, ARS TECHNICA, Aug. 28, 2007, http://arstechnica.com/tech-policy/news/2007/08/judge-torrentspy-must-preserve-data-in-ram.ars.

139. See generally various mocking emails in response to DMCA takedown demands. ThePirateBay.org, http://thepiratebay.org/legal (last visited Oct. 31, 2009).

140. Of course, if no US residents could interact with the website, then there would be no data that would need to be retained. As a result, TorrentSpy did not necessarily violate the judge's order.

141. *See* TorrentSpy, Torrent Acts to Protect Privacy, http://web.archive.org/web/20070831074431/http://www.torrentspy.com/US_Privacy.asp (last visited Jan. 21, 2010).

142. Hushmail's free service has a limit of 2MB storage per account, and offers a premium pay service with much higher storage capacity.

143. Posting of Ryan Singel to Threat Level Blog, Encrypted E-Mail Company Hushmail Spills to Feds, http://www.wired.com/threatlevel/2007/11/encrypted-e-mai (Nov. 7, 2007, 15:39) ("Hushmail, a longtime provider of encrypted web-based email, markets itself by saying

received an order from the Supreme Court of British Columbia in response to a Mutual Legal Assistance Treaty request by the US Drug Enforcement Agency (DEA). US court documents reveal that Hush provided the plain-text contents of three users' email accounts to DEA agents.[144]

At the time, Hushmail offered two different forms of encrypted webmail. In the default mode, the user would type her encryption password into a web form, that would be transmitted to Hush's servers, which would in turn decrypt the email, and then transmit the plaintext of the email to the user. A second more secure solution provided users with a Java-based applet, which downloaded the encrypted mail from Hush's servers, and then decrypted the emails locally. This latter approach provided significantly more security, since the password never left the user's computer, and the decrypted emails never touched Hush' servers or were transmitted over the Internet in the clear.

In this particular case, media reports indicate that the suspects were using the more lightweight of the two encryption solutions, in which a user's password was transmitted to and temporarily stored on Hush's servers for the process of mail decryption.[145] Pursuant to the court order, Hush modified their product to capture the passwords of the three suspects, which it then used to decrypt the 12 CDs worth of email that it provided to US law enforcement agents.[146]

While the Java-based solution would have protected users against this particular form of government compelled circumvention of data encryption, it is by no means foolproof. Just as the company was compelled to modify the programs that ran on its own servers, it could

---

that 'not even a Hushmail employee with access to our servers can read your encrypted e-mail, since each message is uniquely encoded before it leaves your computer.'").

144. *See* Criminal Complaint, Statement of Probable Cause at 4, United States v. Tyler Stumbo, No. 5:07-mj-00034-TAG (E.D. Cal. Sept. 17, 2007), *available at* http://www.wired.com/images_blogs/threatlevel/files/steroids.source.prod_affiliate.25.pdf.

145. Singel, *supra* note 143 ("The rub of that option is that Hushmail has—even if only for a brief moment—a copy of your passphrase. As they disclose in the technical comparison of the two options, this means that an attacker with access to Hushmail's servers can get at the passphrase and thus all of the messages."); Email from Brian Smith, Chief Technical Officer, Hush Communications Corporation, to Kevin Poulsen, Reporter, Wired News (Nov. 5, 2007, 09:38 EST), http://web.archive.org/web/20080315230526/http://blog.wired.com/27bstroke6/hushmail-privacy.html ("The only way to decrypt encrypted Hushmail messages stored on our servers is with the private keys associated with the senders and recipients of those messages, and the only way to access those private keys is with the associated passphrases. . . . The key point, though, is that in the non-Java configuration, private key and passphrase operations are performed on the server-side. This requires that users place a higher level of trust in our servers as a trade off for the better usability they get from not having to install Java and load an applet.").

146. Singel, *supra* note 143 ("In the case of the alleged steroid dealer, the feds seemed to compel Hushmail to exploit this hole, store the suspects' secret passphrase or decryption key, decrypt their messages and hand them over.").

just as easily be compelled to create a modified version of its Java tool which would steal the user's password.[147] Once news of Hush's compliance with the court order became public, Phil Zimmerman, the original designer of Pretty Good Privacy (PGP) and a member of Hush Communication's Advisory Board defended the company, telling one journalist that:

> If your threat model includes the government coming in with all of force of the government and compelling service provider to do things it wants them to do, then there are ways to obtain the plaintext of an email. . . . Just because encryption is involved, that doesn't give you a talisman against a prosecutor. They can compel a service provider to cooperate. . . .

> . . . .

> It would be suicidal for [Hush's] business model if they [ignored court orders]. . . . [T]here are certain kinds of attacks that are beyond the scope of their abilities to thwart. They are not a sovereign state.[148]

F.   *Skype in China*

Most of the publicly known examples of service providers being forced into inserting back doors relate to the surveillance of specific individuals. This is not the only model for the use of backdoors. As this example will demonstrate, sometimes these can be used against an entire population, rather than a few individuals being targeted by an investigation.

In the United States, technology companies are for the most part free to offer their products without the requirement to build in surveillance capabilities at the design stage.[149] Unfortunately, this is not the case everywhere in the world, with China being perhaps the most aggressive in this area.

Skype is a popular voice-over-IP software program that lets users make free peer-to-peer phone calls and conduct instant messaging over

147. Singel, *supra* note 143 ("[Hushmail's CTO] concurs and hints that Hushmail's Java architecture doesn't technically prohibit the company from being able to turn over unscrambled emails to cops with court orders. . . . The extra security given by the Java applet is not particularly relevant, in the practical sense, if an individual account is targeted.") (emphasis removed).

148. Posting of Ryan Singel to Threat Level Blog, PGP Creator Defends Hushmail, http://www.wired.com/threatlevel/2007/11/pgp-creator-def (Nov. 19, 2007, 13:47).

149. The exception to this rule, of course, is the CALEA mandated surveillance capabilities, required of all telecommunication providers. *See* Communications Assistance for Law Enforcement Act and Broadband Access and Services, *First Report & Order & Notice of Proposed Rule Making,* 20 FCC Rcd. 14,989, 14,991–92, ¶ 8 (2005). The government has attempted to apply this law to other markets, but does not appear to have had much success.

the Internet. In order to gain a foothold into the Chinese market, Skype partnered with TOM Online, a leading Chinese provider of wireless phone services, and in 2005 released a special version of the Skype software, known as TOM-Skype.[150] The following year, the company publicly admitted that the TOM-Skype client contains a filtering mechanism that prevents users from sending text messages that include banned phrases such as "Falungong" and "Dalai Lama."[151] Defending the practice, Niklas Zennström, the company's CEO told one reporter that the company is merely complying with local law which, "is what everyone else in that market is doing."[152] While human rights groups were not particularly happy with Zennström's justification, his statement is true: Microsoft, Yahoo and Google have all built censorship technologies into the products they deliver to the Chinese market, and all have defended their behavior by stating that they are required to do so by law.[153]

In addition to the censorship filtering code, human rights groups also claimed that the TOM-Skype contains Trojan horse capabilities that can be used for surveillance by the Chinese Government.[154] These claims were vigorously denied by Skype, which proclaimed that "[i]f the message is found unsuitable for displaying, it is simply discarded and not displayed or transmitted anywhere," "[t]he text filter does not affect in any way the security and encryption mechanisms of Skype," "[f]ull end-

---

150. John Blau, *Skype, Tom Online to Launch Chinese Joint Venture*, INFOWORLD, Sept. 6, 2005, http://www.infoworld.com/t/networking/skype-tom-online-launch-chinese-joint-venture-026 ("In a move to carve out a chunk of China's nascent market for Internet telephone services, Skype Technologies has expanded its partnership with Beijing-based Tom Online by creating a joint venture that will develop and deliver premium services. Building on their agreement last year to develop a simplified version of the Skype VoIP (voice over Internet Protocol) software in Chinese, the companies plan to offer a number of services that customers can use for a fee . . . .").

151. Alison Maitland, *Skype Says Texts are Censored by China*, FIN. TIMES, Apr. 18, 2006, http://www.ft.com/cms/s/2/875630d4-cef9-11da-925d-0000779e2340.html.

152. *Id.* ("Skype, the fast-growing internet communications company that belongs to Ebay, has admitted that its partner in China has filtered text messages, defending this compliance with censorship laws as the only way to do business in the country. In a Financial Times interview, Niklas Zennström, Skype's chief executive, responded to accusations that the company had censored text messages containing words like 'Falun Gong'—a banned movement—and 'Dalai Lama.' He said that Tom Online, its joint venture partner in China, was complying with local law.").

153. HUMAN RIGHTS WATCH, RACE TO THE BOTTOM: CORPORATE COMPLICITY IN CHINESE INTERNET CENSORSHIP 30 (2006), *available at* http://www.hrw.org/reports/2006/china0806/5.htm#_Toc142395828.

154. *Skype Strengthens Cooperation with Chinese Regime On Internet Censorship*, THE EPOCH TIMES, Sept. 29, 2007, http://en.epochtimes.com/news/7-9-29/60228.html ("Dynamic Internet Technologies (DIT), a North America-based company known for its products that override Internet censorship, recently discovered that the Internet phone service company Skype is cooperating with Internet censorship in China. On Monday DIT announced that it has tested and confirmed that Skype.com redirects visits from Chinese IP addresses to the homepage of Tom-Skype that has Trojan horse capabilities.").

to-end security is preserved and there is no compromise of people's privacy" and "[c]alls, chats and all other forms of communication on Skype continue to be encrypted and secure."[155]

In 2008, a group of Canadian human rights activists and computer security researchers discovered that in addition to censoring messages, the TOM-Skype software also transmits these flagged messages as well as information identifying the sender and recipient back to one of several TOM-Skype run servers in mainland China. The researchers were able to download and analyze copies of the surveillance data from the TOM-Skype servers, because the Chinese computers were improperly configured, leaving the log files accessible to anyone with a web browser who knew their location. In just two months, the servers archived more than 166,000 censored messages from 44,000 users.[156]

Once news of the surveillance became public, Skype's President revealed that "we have discovered in our conversations with TOM is that they in fact were required to do this by the Chinese government[]" and that the firm would "ensure that it is clear and transparent to Skype users that their chat messages into and out of China may be monitored and stored."[157] The company did, however, quickly password protect the surveillance servers, so that the logs of individuals' conversations were no longer publicly accessible.[158]

G.   The Java Anonymous Proxy

While all of the preceding examples relate to the government gaining access to or circumventing the privacy protections in commercial services, it appears that legal coercion can similarly be used to sneak backdoors into open source software products.[159]

There are now several open source software projects which aim to provide end-users with the ability to anonymously browse the Internet.

---

155. Posting of Jaanus Kase to Official Skype Blog, Comments About Skype Chat Text Filtering in China, http://share.skype.com/sites/en/2006/04/comments_about_skype_chat_text.html (Apr. 19, 2006).

156. *See* John Markoff, *Surveillance of Skype Messages Found in China*, N.Y. TIMES, Oct. 1, 2008, at C1, *available at* http://www.nytimes.com/2008/10/02/technology/internet/02skype.html.

157. Posting of Josh Silverman to Official Skype Blog, Answers to Some Commonly Asked Questions About the Chinese Privacy Breach, http://share.skype.com/sites/en/2008/10/answers_to_some_commonly_asked.html (Oct. 4, 2008).

158. Posting of Josh Silverman to Official Skype Blog, Skype President Addresses Chinese Privacy Breach, http://share.skype.com/sites/en/2008/10/skype_president_addresses_chin.html (Oct. 2, 2008) ("We also learned yesterday about the existence of a security breach that made it possible for people to gain access to those stored messages on TOM's servers. We were very concerned to learn about both issues and after we urgently addressed this situation with TOM, they fixed the security breach.").

159. *See, e.g.*, Open Source Initiative, The Open Source Definition, http://www.opensource.org/docs/definition.php (last visited Mar. 23, 2010).

While Tor[160] is perhaps the most well known of these, others do exist, including the Java Anonymous Proxy (JAP), a software tool designed by researchers from several German universities. Each anonymous networking system is designed differently, but in general, they all provide users with privacy by bouncing their encrypted Internet traffic through several servers around the world. Ideally, a government watching a suspect's network connection will not be able to learn which websites she is visiting, while the owners of those websites will not be able to identify the true IP address of the anonymous visitor.

In mid 2003, the JAP network went down "due to a hardware failure." When the service was restored, users were informed that they had to install an "upgraded version" of the application in order to again use the anonymizing network. No explanation was given for the necessary upgrade. However, since JAP was an open source project, users could look through the source code and quickly determine which lines of code had been added to the latest version. Savvy users quickly discovered a few suspicious looking lines of source code:

"CAMsg::printMsg(LOG_INFO,"Loading   Crime   Detection DataFalse\n");"

"CAMsg::printMsg(LOG_CRIT,"Crime detected - ID: %u - Content: \n%s\n",id,crimeBuff,payLen);"[161]

When confronted by members of the security community, the JAP developers acknowledged the existence of the "crime detection function" in the system, and revealed that the code had been inserted in response to a court order obtained by the German Federal Office of Criminal Investigation. They pledged that privacy in the JAP system was safe, because only "one Web site [was] currently being disclosed, and only under court-ordered monitoring."[162]

This revelation resulted in a significant amount of criticism from

---

160. *See* The Tor Project, http://www.torproject.org (last visited Jan. 21, 2010).

161. Thomas C. Greene, *Net Anonymity Service Back-Doored*, THE REGISTER, Aug. 21, 2003, http://www.theregister.co.uk/2003/08/21/net_anonymity_service_backdoored.

162. *Id.*; The Independent Centre for Privacy Protection also explained:

   Except for the case mentioned above, the protection of the users' anonymity is and
   will remain the central warranty of AN.ON. The AN.ON operators warn against
   the generalisation [sic] of this single case and the general jeopardising [sic] of the
   whole service. Anonymity in the internet makes still sense when the access to a
   single website with illegal content is recorded for a limited time period due to a
   court decision.

Press Release, Independent Centre for Privacy Protection, AN.ON Still Guarantees Anonymity (Aug. 19, 2003), https://www.datenschutzzentrum.de/material/themen/presse/anonip_e.htm.

members of the academic security community, as well as multiple negative articles in the press. While the JAP developers were merely complying with the court's order, they still suffered significant damage to their project's reputation. According to a statement by the developers in 2006, only one court order has ever been issued forcing them to use the backdoor.[163]

V.   THE LAW

While these examples clearly demonstrate that governments have forced service providers to insert back doors into their own products, the legal justification requiring the company to comply is not always clear. Often, the public only learns of the company's assistance to the government through a brief mention in court documents. However, the legal documents presented to the company are rarely if ever made public. There are several laws which can be used to justify the compelled insertion of back doors in products. These areas of US law will now be highlighted.

A.   The Wiretap Act (Title III)

The Wiretap Act[164] regulates the collection of actual content of wire and electronic communications. The Wiretap Act was first passed as Title III of the Omnibus Crime Control and Safe Streets Act of 1968[165] and is generally known as "Title III." Prior to the 1986 amendment by Title I of the Electronic Communications Privacy Act (ECPA),[166] it covered only wire and oral communications. Title I of the ECPA extended that coverage to electronic communications.[167]

18 U.S.C. § 2518(4) states that:

> An order authorizing the interception of a wire, oral, or electronic communication under this chapter shall, upon request of the applicant, direct that a provider of wire or electronic communication service, landlord, custodian or other person *shall furnish the applicant forthwith all information, facilities, and technical assistance necessary to accomplish the interception* unobtrusively and with a minimum of interference with the services that such service provider, landlord,

---

163. JAP—Anonymity & Privacy, JAP and Crime Prevention, http://anon.inf.tu-dresden.de/strafverfolgung/index_en.html (last visited Jan. 21, 2010) ("In 2006, there has been only one single surveillance court order to single Mix operators. A few exactly specified web addresses were affected. The observation has been stopped after the court order expired (one month).").

164. Codified as amended in 18 U.S.C. §§ 2510–2522 (2009).

165. Pub. L. 90-351, 82 Stat. 197 (1968).

166. Pub. L. 99-508, 100 Stat. 1848 (1986).

167. *See* 18 U.S.C. § 2510(12) (2009).

custodian, or person is according the person whose communications are to be intercepted.[168]

18 U.S.C. § 2518(4) also states that:

Any provider of wire or electronic communication service, landlord, custodian or other person furnishing such facilities or technical assistance shall be compensated therefore by the applicant for reasonable expenses incurred in providing such facilities or assistance.[169]

In the car navigation case discussed earlier in this article, the court determined that the term "other person" in 18 U.S.C. § 2518(4) also includes "an individual or entity who both provides some sort of service to the target of the surveillance and is uniquely situated to assist in intercepting communications through its facilities or technical abilities."[170] At least based on that court's interpretation of the law in that case, the Wiretap Act can be used to justify forcing a service provider to create new functionality in its products solely for the purpose of wiretapping customers.

While the technical details of the FBI's Magic Lantern/CIPAV system have yet to be revealed, some legal experts did discuss the possible means through which the government might be able to compel anti-virus vendors to ignore or even white list the FBI's spyware tool. An attorney with the Electronic Frontier Foundation told one journalist that "[t]he government would be pushing the boundaries of the law if it attempted to obtain such an order . . . . There's simply no precedent for this sort of thing."[171] He did, however, point to the Wiretap Act as one possible source for this coercive power, adding that "[t]here is some breadth in that language that is of concern and that the Justice Department may attempt to exploit."[172]

B.   United States v. New York Telephone Co. *(1977)*

One of the most relevant cases relating to compelled covert assistance is that of *United States v. New York Telephone Co.*[173] In this case, the District Court authorized the FBI to install and use pen register surveillance devices[174] on two telephones used by the suspects of a

---

168. 18 U.S.C. § 2518(4) (2009) (emphasis added).

169. *Id.*

170. The Company v. United States, 349 F.3d 1132, 1143 (9th Cir. 2003).

171. McCullagh & Broache, *supra* note 122, at 2.

172. *Id.*

173. 434 U.S. 159 (1977).

174. Pen register devices record the numbers dialed by a phone, without overhearing oral

government investigation.[175] The court also directed the telephone company to furnish the FBI "all information, facilities and technical assistance" necessary to install and use the devices.[176] The telephone company refused to lease to the FBI phone lines that were needed for unobtrusive installation of the pen registers, and thereafter asked the court to vacate that portion of the pen register order directing respondent to furnish facilities and technical assistance to the FBI on the ground that such a directive could be issued only in connection with a Title III wiretap order.[177]

The Court of Appeals held that the District Court abused its discretion in ordering the telephone company to assist in installing and operating the pen registers, and expressed concern that such a requirement could establish an undesirable precedent for the authority of federal courts to impress unwilling aid on private third parties.[178]

The Supreme Court was far more willing to extend these coercive powers to the US government, looking primarily to the All Writs Act.[179] That Act states:

> The Supreme Court and all courts established by Act of Congress may issue all writs necessary or appropriate in aid of their respective jurisdictions and agreeable to the usages and principles of law.[180]

With regard to this case, first, the Supreme Court noted that "[t]he assistance of the Company was required . . . to implement a pen register order which . . . the District Court was empowered to issue."[181] It also noted that:

> [W]ithout the Company's assistance there is no conceivable way in which the surveillance authorized by the District Court could have been successfully accomplished. . . . The provision of a leased line by the Company was essential to the fulfillment of the purpose—to learn the identities of those connected with the gambling operation— for which the pen register order had been issued.[182]

Then, citing the All Writs Act, the court ruled that "[u]nless appropriately confined by Congress, a federal court may avail itself of all

---

communications or indicating whether calls are completed.

175. *New York Tel.*, 434 U.S. at 161.
176. *Id.*
177. *Id.* at 162.
178. *Id.* at 164.
179. *Id.* at 172.
180. 28 U.S.C. § 1651(a) (2008).
181. *New York Tel.*, 434 U.S. at 172.
182. *Id.* at 175.

auxiliary writs as aids in the performance of its duties, when the use of such historic aids is calculated in its sound judgment to achieve the ends of justice entrusted to it."[183] Furthermore:

> The power conferred by the [All Writs] Act extends, under appropriate circumstances, to persons who, though not parties to the original action or engaged in wrongdoing, are in a position to frustrate the implementation of a court order or the proper administration of justice. . . .
>
> . . . .
>
> . . . [W]e do not think that the [Phone] Company was a third party so far removed from the underlying controversy that its assistance could not permissibly be compelled. A United States District Court found that there was probable cause to believe that the Company's facilities were being employed to faciliate a criminal enterprise . . . .[184]

Concluding, the court wrote that "[t]he conviction that private citizens have a duty to provide assistance to law enforcement officials when it is required is by no means foreign to our traditions."[185] However, in an effort to place at least some limit to this power, the court noted that the District Court's original order "required minimal effort on the part of the Company and *no disruption to its operations.*"[186]

C.   Other Mentions of the All Writs Act

While *New York Telephone* is the most important case that relies on the All Writs Act to justify these coercive powers, it is not the only time that the Government has depended upon this age-old statute.

In a 2005 case relating to attempts by the government to obtain the real time location information of mobile phone customers,[187] the Department of Justice revealed that:

> Currently, the government routinely applies for and upon a showing of relevance to an ongoing investigation receives 'hotwatch' orders issued pursuant to the All Writs Act. Such orders direct a credit card issuer to disclose to law enforcement each subsequent credit card transaction effected by a subject of investigation immediately after the issuer records that transaction. . . . While the evidence sought by All

---

183. *Id.* at 172–73 (citing Adams v. United States *ex rel.* McCann, 317 U. S. 269, 273 (1942)).
184. *Id.* at 173–74.
185. *Id.* at 175 n.24.
186. *Id.* at 175 (emphasis added).
187. *In re* Authorizing Use of a Pen Register, 384 F.Supp.2d 562 (E.D.N.Y. 2005).

Writs orders in such cases is often pre-existing, *see, e.g.*, United States v. Doe, 537 F. Supp. at 839 (ordering disclosure of 6 prior months of telephone toll records), there is no legal impediment to issuing such an order for records yet to be created. *See, e.g.*, *In re* Application of the U.S.A. For An Order Directing X To Provide Access to Videotapes, 2003 WL 22053105, No. 03-89 (Aug. 22, 2003 D. Md.) (directing that production of subsequently-created videotapes made by security camera installed in apartment hallway).[188]

In the same case, the Department of Justice noted that the power to issue supplemental orders in aid of the court's jurisdiction "extends to persons who are not defendants and have not affirmatively obstructed justice."[189] Again, for this authority, the Department of Justice turned to the All Writs Act: "[A]ny additional authority needed for the Court to direct prospective disclosure of cellsite information, the Court already possesses it under the All Writs Act . . . which authorizes the issuance of orders in aid of the Court's jurisdiction."[190]

The Judge in this case disagreed with the Department of Justice, denying their request, and ruled that:

> The government thus asks me to read into the All Writs Act an empowerment of the judiciary to grant the executive branch authority to use investigative techniques either explicitly denied it by the legislative branch, or at a minimum omitted from a far-reaching and detailed statutory scheme that has received the legislature's intensive and repeated consideration. Such a broad reading of the statute invites an exercise of judicial activism that is breathtaking in its scope and fundamentally inconsistent with my understanding of the extent of my authority.[191]

The government's attempt to turn the All Writs Act into the "All Surveillance Act" appears to have been frustrated, at least in this case.[192] However, it also seems that its argument has been repeatedly (and successfully) used to justify the issuance of credit card "hotwatch" orders.[193]

---

188. Reply Brief for the Department of Justice at 8-9, *In re* Authorizing Use of a Pen Register, 384 F.Supp.2d 562 (E.D.N.Y. 2005) (Magistrate's Docket No. 05-1093(JO)), *available at* http://www.eff.org/legal/cases/USA_v_PenRegister/celltracking_govt_reply.pdf.

189. *Id.* at 8 (citing United States v. Doe, 537 F. Supp. 838, 839 (E.D.N.Y. 1982)).

190. *Id.* at 2–3.

191. *In re* Authorizing Use of a Pen Register, 384 F.Supp.2d 562 (E.D.N.Y. 2005) (order reaffirming denial of government's phone tracking request), *available at* http://www.eff.org/files/filenode/USA_v_PenRegister/celltracking_decision.pdf.

192. Posting of Kurt Opsahl to the Electronic Frontier Foundation's Deep Links Blog, The All Surveillance Act, http://www.eff.org/deeplinks/2005/10/all-surveillance-act (Oct. 12, 2005).

193. This author has attempted to find out more about these prospective requests for

D.   *The Foreign Intelligence Surveillance Act (FISA)*

While both the Wiretap Act and the All Writs Act seem to be the legal tools of choice for law enforcement agencies, there is at least one other legal avenue through which the government can force service providers to insert backdoors into their own products. The 2008 FISA Amendments Act[194] amended the Foreign Intelligence Surveillance Act[195] to state that:

> (1) . . . [T]he Attorney General and the Director of National Intelligence may direct, in writing, an electronic communication service provider to—
>
> > (A) immediately provide the Government with all information, facilities, or assistance necessary to accomplish the acquisition in a manner that will protect the secrecy of the acquisition and produce a minimum of interference with the services that such electronic communication service provider is providing to the target of the acquisition. . . .
>
> (2) . . . The Government shall compensate, at the prevailing rate, an electronic communication service provider for providing information, facilities, or assistance in accordance with a directive issued pursuant to paragraph (1).[196]

Details on the government's interpretation and use of this law are understandably impossible to find. However, some commentators have argued that the law gives "the government wide powers to order communication service providers such as cell phone companies and ISPs to make their networks available to government eavesdroppers."[197]

VI.   ENCRYPTION CAN BE CIRCUMVENTED

Let us now go back to our earlier hypothetical scenario in which all cloud services have switched to data encryption with a key private to the user. In this situation, the government will not be able to use a subpoena

---

credit card transaction information. The US Department of Justice found 10 relevant documents in response to the author's Freedom of Information Act request, but has refused to deliver them.

   194. Foreign Intelligence Surveillance Act of 1978 Amendments Act of 2008, Pub. L. No. 110–261, 122 Stat. 2441 (codified as amended in scattered sections of 50 U.S.C.).

   195. 50 U.S.C. §§ 1801 *et. seq.*

   196. 50 U.S.C. §§ 1881a(h)(1)–(2).

   197. Posting of Ryan Singel to Threat Level Blog, Analysis: New Law Gives Government Six Months to Turn Internet and Phone Systems into Permanent Spying Architecture— UPDATED, http://www.wired.com/threatlevel/2007/08/analysis-new-la (Aug. 6, 2007, 00:11).

to force the revelation of a user's private files, since the service provider will only possess encrypted data. However, it may be possible for the government to force that company to place a backdoor in its web-based product in order to steal the user's encryption key. As an example, when the user enters her password in to the encryption enhanced Google Docs web application, instead of keeping the password in local memory on her computer, a copy of it will be silently recorded and later transmitted to a FBI server.

While market forces might be able to neutralize the privacy problems associated with the third party doctrine by encouraging the use of encryption, there are no readily available market forces or technology that can protect a company from a lawful order compelling that firm to insert a backdoor into its own products. To make matters worse, the move to cloud computing increases the amount of private information available at risk of covert government capture, and, as this next section will explain, also makes it significantly easier for companies to deploy these compelled backdoors.

A.   Traditional Software is Pretty Hard to Covertly Back Door

One of the defining features of the Internet era is the ability of technology firms to later fix problems in their products, to release new features after the date of initial sale, and in some cases, to even remove useful features.[198] A fix that would in years past have required a costly and slow product recall can now be deployed to all customers with a mere software update. This ability to release products half-finished, rushing them to the market confident in the knowledge that remaining issues can be fixed with a later patch has led to a situation that some experts call a

---

198. *See, e.g., TiVo's Day: EchoStar DVRs Off*, RED HERRING, Aug. 17, 2006, http://www.redherring.com/Home/18034 ("A federal court in Marshall, Texas, ordered EchoStar Communications, the second-largest satellite TV operator in the United States, to disable the digital video recorders currently being used by millions of its customers. . . . EchoStar, which has more than 12 million customers, has been ordered to disable the DVRs within 30 days."). *See also Apple iTunes Update Irritates Fans*, BBC NEWS, May 29, 2003, http://news.bbc.co.uk/2/hi/technology/2946180.stm ("Apple is clamping down on piracy by imposing restrictions on the way that music can be shared via the iTunes service. Changes to the service stop people listening across the internet to playlists of songs created by others."); Posting of Jason Schultz to LawGeek blog, *Meet the New iTunes, Less Than the Old iTunes?*, http://lawgeek.typepad.com/lawgeek/2004/04/meet_the_new_it.html (Apr. 29, 2004) ("In iTunes 4.5, you can authorize up to five Macs or Windows computers to play your purchased music—up from three. But Apple giveth and Apple taketh away: you can now burn a playlist containing purchased music up to seven times (down from ten). And the old workaround of simply changing the playlist slightly does not work.") (emphasis removed); Nick Farrell, *Apple Squeezes iTunes Customers*, THE INQUIRER, Mar. 16, 2005, http://www.theinquirer.net/inquirer/news/156/1002156/apple-squeezes-itunes-customers ("However, Apple has moved to restrict the streaming capability. In the good old days it used to support five simultaneous listeners, but now allows only allows five listeners a day.").

state of perpetual beta.[199]

In many cases, these updates must be manually downloaded and installed by the user. When this is the case, adoption rates can be extremely low.[200] This can lead to problems for government agencies that wish to compel a traditional software company, such as an operating system vendor, into creating and deploying a back door. If users cannot be convinced to download and install critical security updates that might protect them from hackers, how can they be convinced to download and install government back doors that will pilfer their private files.

Another problem associated with the insertion of back doors in traditional software products is the fact that most vendors do not know their customers' identities. Many copies of Microsoft Windows and other software suites are bundled with new computers, negotiated as part of site licenses for companies and universities. Unless the user registers their software installation, the software supplier simply will not know which individual is associated with any particular computer. The widespread problem of software piracy makes this even worse, since these users are even less likely to register their illicit installations under their own names.

This inability to tie an identifiable customer to a particular software installation poses a serious barrier to the government's ability to compel most traditional software providers into rolling out covert back doors, even if the customer can be convinced to install it. Sure, the company can opt to supply to the sneaky update to *all* customers based on the assumption that the government's suspect will be one of the impacted users. However, this approach is likely to draw the attention of security

---

199. Tim O'Reilly, *What Is Web 2.0,* O'REILLY NETWORK, Sept. 30, 2005, http://oreilly.com/lpt/a/6228 ("The open source dictum, 'release early and release often' in fact has morphed into an even more radical position, 'the perpetual beta,' in which the product is developed in the open, with new features slipstreamed in on a monthly, weekly, or even daily basis. It's no accident that services such as Gmail, Google Maps, Flickr, del.icio.us, and the like may be expected to bear a 'Beta' logo for years at a time.").

200. For example, one report describes the use of silent updates to improve security:

> Our measurements prove that silent updates and little dependency on the underlying operating system are most effective to get users of Web browsers to surf the Web with the latest browser version. . . . We recommend any software vendor to seriously consider deploying silent updates as this benefits both the vendor and the user, especially for widely used attack-exposed applications like Web browsers and browser plug-ins.
>
> . . . .
>
> . . . With silent updates, the user does not have to care about updates and system maintenance and the system stays most secure at any time. We think this is a reasonable default for most Internet users.

Thomas Duebendorfer & Stefan Frei, *Why Silent Updates Boost Security*, ETH TECH REPORT 302, May 5, 2009, at 1, 8, *available at* http://www.techzoom.net/papers/browser_silent_updates_2009.pdf.

researchers and hackers who routinely reverse engineer software updates in order to learn which flaws have been fixed.[201]

The move to cloud computing makes it far easier for the government to effectively force the deployment of covert back doors. This is due to a few key features specific to the Web 2.0 application model: identifiable customers, automatic, silent updates, and the complete absence of visible product releases.

B.   *Updates and the Cloud*

One of the most useful features of the Web 2.0 paradigm, for both provider and customer, is that users are always running the latest version of a particular web-based application. There is simply no need to coax an update, because it is simply impossible to run anything *but* the latest version.

The vast majority of cloud-based software runs in a web browser. In this model, a user visits a web page, and her browser immediately downloads the programmatic code which is used to implement the Web page's functionality. When the user revisits that same website the next day, her web browser requests the same content again, and then downloads it from the company's web server.[202] If the website owner has updated the code, a new version of the application will be downloaded, without any notification to the user that the code running on her computer today is different than the day before.[203]

Traditional software vendors, both application and operating system, ship software with a version number. Users can, if they know how, find out which version of Microsoft Word, Photoshop or Quicken they are running. In fact, many applications display their current version number when starting.

Contrast this to the situation for the users of cloud-based services.

---

201. David Brumley et al., *Automatic Patch-Based Exploit Generation is Possible: Techniques and Implications*, 2008 IEEE Symposium on Security and Privacy (May 2008), *available at* http://www.ece.cmu.edu/~dbrumley/pubs/apeg.pdf ("[A]utomatic patch-based exploit generation is possible as demonstrated by our experiments using 5 Windows programs that have recently been patched. We do not claim our techniques work in all cases or for all vulnerabilities. However, a fundamental tenet of security is to conservatively estimate the capabilities of attackers. Under this assumption, [automatic patch-based exploit generation] should be considered practical, and those who have received a patch should be considered armed with an exploit.").

202. In some cases, a cloud application might cache a local copy of its JavaScript code in the user's browser (such as with Gmail). However, this is only done for performance reasons—if the user clears his or her cache, uses a new computer, or if the application provider releases a new version of their software, the JavaScript code will be re-obtained. Likewise, there is no notification to the user that a cached copy is being used, or a new copy is being downloaded.

203. Sarno, *supra* note 25 ("In response, Google asserted that its cloud-based system can quickly deploy upgrades and security updates to all of its customers, something that is less seamless when organizations maintain their own computer systems on site.").

Google does not provide a version number for its Gmail or Docs service. Neither does Yahoo, Facebook, or MySpace. New features might be announced, or suddenly appear, however, when bugs are fixed, these are usually done so quietly with no notification to the user.

If a user of Google Docs starts up her computer, connects to the Internet and accesses her documents, she has no way of knowing if her browser is executing different code than it ran the day before. The same user running Firefox or Microsoft Windows would have a much better chance of knowing this, and in most cases, of declining to perform an update if one was made available.

Finally, most cloud providers know a significant amount more about their customers than traditional software companies. Unless a customer has given a false name, email providers and social networking companies know who their customers are as well as the names and contact information for their friends. As a result, if law enforcement agencies serve a subpoena in order to obtain the files for a specific customer, most cloud computing providers know exactly which account to target.

This shift in the effectiveness of software updates and the ease of customer identification significantly weakens the ability of cloud providers to protect their customers' privacy with encryption. While Google could add encryption to its Docs application, the company could just as easily be forced to add a back door in to the browser code which would steal the user's key. As I have just explained, this would be automatically downloaded and executed the next time that the user logged in, with no way for her to avoid the update, or even know that it was applied. Furthermore, because of the fact that Google typically knows which *particular* user account an individual is using, it can issue the backdoor-laced update to only that user. Essentially, cloud computing makes it far easier for companies to force out covert backdoors with surgical precision to only those persons who the government has targeted.

VII. POTENTIAL SOLUTIONS TO THE COMPELLED BACKDOOR PROBLEM

The problem of compelled back doors is extremely difficult. Due to powers provided to the government by the various laws outlined earlier in this article, consumers can never completely trust the companies who make and supply the software that they use to go about their daily business online. Any firm can be compelled to insert a back door into its own product, no matter how committed it is to protecting the privacy of its customers.

The simplest solution to this problem would be to amend the law to prohibit this coercive behavior by government agencies. However, given

the realities of Washington DC, and the fear of being accused of being soft on terrorism or child pornography, it is unlikely that Congress would agree to any form of legislative fix which took away this power. Thus, we focus our attention upon non-legislative solutions to this issue.

A.   Privacy Through Open Source Software

Of the backdoor examples presented in this article, most came to light through their mention in court documents, often in passing. Furthermore, while it is publicly known that *a* manufacturer of GPS navigation equipment was forced to snoop on its customers, six years on, the identity of the particular company whose product was turned into a covert microphone by the FBI has not been confirmed.

The *Java Anonymous Proxy* incident demonstrates that it is exceedingly difficult to covertly install a backdoor into an open-source software product, as inquisitive users will look through the changes in the source code with the intention of discovering the new feature. Furthermore, due to the highly distributed nature of many open source projects, even if developers in one country are forced into secrecy by a gag order, developers in another will not be. These developers will already be highly familiar with the source code, and thus will be most likely to notice and publicize any suspect changes.

Applying this observation to the market for cloud computing services, I argue that while the government could *in theory* force the Mozilla Corporation to insert a backdoor into its Weave encrypted browser add-on, such an action would likely be soon discovered. Whereas a court order could effectively lead to the circumvention of an encrypted cloud computing service provided by Google, Yahoo and Microsoft, I do not believe that the government's coercive powers are nearly as effective against open source software.

To slightly paraphrase Eric S. Raymond, given enough eyeballs, all surveillance bugs are shallow.[204]

While open source products may provide superior protection from covert back doors, the current cloud computing market is primarily one in which consumers are provided free access to proprietary software. A switch to 100% open source is thus not likely to happen. Given the reality of the market, cloud software suppliers who do opt to embrace encryption should at least make sure that the programmatic code which has receives and makes use of each user's password be open source software—preferably the web browser. As an example, Mozilla should provide a simple Application Programming Interface (API) through

---

204. *See* ERIC S. RAYMOND, THE CATHEDRAL & THE BAZAAR: MUSINGS ON LINUX AND OPEN SOURCE BY AN ACCIDENTAL REVOLUTIONARY 41 (rev. ed. 2001).

which cloud computing services can request the encryption and decryption of files—with the Firefox browser itself handling the user's password and all encryption functionality. This system design would provide the best of both worlds: increased protection for user's encryption keys and private files, while permitting private companies to continue to offer innovative technology through the propriety software model to which they are committed.

B. *Web Application Fingerprinting*

As the Skype example demonstrates, it is far tougher to keep the backdoor in a piece of software a secret once it has been distributed to millions of users, especially if some of those users are security researchers. If backdoors are to remain secret, governments would be wise to take steps to deliver the compromised updates to only those suspects targeted by an investigation, rather than the population at large.

A problem that has long frustrated the academic security community is that users typically have no way to guarantee that the software running on their computers is safe, and has not been tampered with since it was released by the software vendor. Most of the efforts to address this issue have primarily focused on the authentication of software downloads and installations. However, these solutions do not address the threat of post-installation software modification.

The threat of post-installation modification of software has been partially addressed by file integrity tools such as Tripwire.[205] These applications examine the files on a system, and calculate an individual fingerprint (or "hash") for each file. Then, at regular intervals in the future, these fingerprints can be recalculated and compared to the previously created database. File integrity tools can play a key role in maintaining the security of a computer system, by providing system administrators with rapid notification after an improper change has been detected. Unfortunately, these tools are not commonly available to home users, although they are provided to businesses by some enterprise software vendors.[206]

The threat of secret backdoors in cloud-based software is not one that can be fixed by authenticating the distribution of those web applications—since the back doors will be created and distributed by the web application provider. This risk essentially comes down to the fact that users of cloud-based software have no real way of knowing if they are running the same piece of software that they were running the day

---

205. *See, e.g.,* Open Source Tripwire, http://sourceforge.net/projects/tripwire (last visited Jan. 24, 2010).

206. *See, e.g.,* Sun Fingerprint Database, http://sunsolve.sun.com/show.do?target=content/content7 (last visited Jan. 24, 2010).

before, or if the version they are running is different than that being used by their friends and colleagues. By providing users the ability to fingerprint and compare the web-based applications they are running, such a technical solution may be able to provide users some protection from covert backdoors—since, to avoid such a fingerprint-based scheme from flagging an individual software update, the vendor would need to distribute it to all users, and not just one individual targeted by a government investigation. Furthermore, as described earlier, back doors that are distributed to all users are far more likely to be discovered by curious security researchers than those distributed to a few individuals with care and precision.

There does not exist currently a software tool that enables users to compare the code of the web applications they are running to the code used by their friends, colleagues and the millions of other anonymous persons on the Internet. I do not believe that the design of such a system would be prohibitively difficult, and it could prove to be quite useful. Its creation is left as an exercise to others.

CONCLUSION

As this article has noted, the mass adoption of cloud computing based services has significantly tipped the scales of privacy away from the end user—it is now much easier for hackers, private investigators or law enforcement and intelligence agents to access a user's private files. In some cases, these privacy risks are due to cost saving measures on the part of service providers. In others, the risks are due to the coercive powers wielded by the government.

Government agencies can now leverage economies of scale, and take advantage of the fact that the user no longer needs to be consulted or notified before her data is seized. In many cases, due simply to the reality that a single company is responsible for storing private data for millions of users, the government can obtain data on an additional individual at almost no cost. That is, the cost of adding one more person to the subpoena is free.

While the ease of government access made possible by the third party doctrine is certainly troubling, the use of data encryption and strict adherence to no-logging policies can act as a significant balance against this power. Were the third party doctrine to be done away with, the threats of hackers breaking into a company's servers and insiders peeking at a user's files would still remain—encryption is a technique that provides protection against all of these threats.

As I have documented at length, the real threat to end-user privacy is the ease with which the government can force an application provider to insert a backdoor or flaw in its own products. While this is certainly a

risk that existed pre-cloud computing, it has been made more effective, and more difficult to discover through the shift to cloud-delivered software. The government can order a change, and the next day, every user of a service specified in the government's order will be running code with that backdoor—an efficiency of adoption that was never possible before. This is not an easy problem to solve, and the solutions I have proposed are by no means comprehensive. Until these or other solutions have been implemented and deployed, consumers should exercise significant caution when using cloud-based tools to edit files that they wish to keep private.

In the cloud, the government is just one subpoena away.

WHY TYPEFACES PROLIFERATE WITHOUT COPYRIGHT PROTECTION

Blake Fry*

The typeface design industry receives little protection from intellectual property laws, copyright or otherwise, yet produces sufficient new works. This fact challenges the incentive theory on which copyrights—which come with economic and social costs—are based.

INTRODUCTION

The ostensible purpose of the Constitution's Intellectual Property clause is to give authors and publishers sufficient incentive to create and disseminate new works.[1] Authors and publishers need government-granted incentives, the standard rationale goes, because expressive works[2] are usually cheap and easy to copy and—since copies can be made without depleting the original—infinitely reproducible.[3] They are, in economic parlance, public goods, non-excludable and non-rivalrous. Without any impediment, it's only rational for consumers to procure cheap or free copies of an expressive work, or to copy it themselves, rather than buying full-priced, authorized versions.[4] These unsanctioned copies can potentially satisfy all demand for the expressive work.[5] Classic economic theory therefore predicts that sale prices will ultimately be driven down to a work's marginal replication cost.[6] If works cannot be sold at a higher price than this, authors and publishers will have no economic incentive to invest the time or money needed to produce or distribute new works, and the public will suffer a shortage.[7] Copyrights are an attempt to solve this problem.[8] By granting a monopoly to the author of an expressive work the government gives him the sole right to copy it. If only the author has this right, sale-prices will remain above the

---

    1. The Intellectual Property clause grants Congress the power "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." U.S. CONST. art. I, § 8, cl. 8. *See also* Eldred v. Ashcroft, 537 U.S. 186, 212 n.18 (2003) (stating that copyright law is an "incentive" to create works for the public good).

    2. This article uses the term "expressive work" to mean "any work that might be a candidate for copyright protection under modern law." WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW 37 (2003).

    3. Dotan Oliar, *Making Sense of the Intellectual Property Clause: Promotion of Progress as a Limitation on Congress's Intellectual Property Power*, 94 GEO. L.J. 1771, 1797 (2006).

    4. *See* MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS 14–15 (rev. ed. 1971).

    5. James Boyle, *Cruel, Mean, or Lavish? Economic Analysis, Price Discrimination and Digital Intellectual Property*, 53 VAND. L. REV. 2007, 2012 (2000). Public goods, whether they are expressive works or not, always risk underproduction because of their amenability to free-riding copyists. LANDES & POSNER, *supra* note 2, at 40.

    6. JAMES BOYLE, THE PUBLIC DOMAIN 38 (2008); DAVID W. BARNES & LYNN A. STOUT, CASES AND MATERIALS ON LAW AND ECONOMICS 349 (1992) ("Marginal costs include only the additional costs of producing one more unit.").

    7. LANDES & POSNER, *supra* note 2, at 40.

    8. NEIL WEINSTOCK NETANEL, COPYRIGHT'S PARADOX 84 (2008).

marginal cost to copy, the author will get a reasonable rate of return, and thus a sufficient incentive to make new works.[9]

The theory behind the need for copyright is intuitive, but is it right?[10] Surely there's a mountain of evidence to support it. Surprisingly, that evidence is hard to come by.[11] This is a little disturbing. Copyrights, being monopolies, come with significant economic and social costs. In the famous words of Lord Macaulay, monopolies tend to make "articles scarce, to make them dear, and to make them bad."[12] Macaulay's warning has become even truer as intellectual property rights have expanded in every way possible over the last thirty or so years.[13] Most expressive works, regardless of romantic ideas of authorship, build on previous ones.[14] Because copyrighted works are excluded from the public domain, and because more kinds of works are protected for longer periods, there are often constraints on making new ones. Getting permission to build on copyrighted material—assuming that it is even granted—takes time and money.[15] If the time or money it takes is exorbitant, the copyrighted work will effectively not be available for use, or reuse. The culture the next generation of authors needs to create new works from is therefore "locked up,"[16] to the detriment of creativity and culture.[17] The upshot of too-broad copyright protection is that copyrights often work, paradoxically, to stifle innovation.[18]

So who has benefitted from copyright maximization?[19] Mostly large content-generating industries who have captured the legislative process to advance their interests.[20] In a digital world expressive works tend to be

---

9. Raymond Shih Ray Ku, *The Creative Destruction of Copyright: Napster and the New Economics of Digital Technology*, 69 U. CHI. L. REV. 263, 296 (2002).

10. *See* Michael A. Carrier, *Cabining Intellectual Property Through a Property Paradigm*, 54 DUKE L.J. 1, 34 (2004).

11. NETANEL, *supra* note 8.

12. Thomas Macaulay, *A Speech Delivered in the House of Commons on the 5th of February, 1841, in* 2 CRITICAL CONCEPTS IN LAW 9, 12 (David Vaver ed., 2006); *see also* Arnold Plant, *The Economic Aspects of Copyright in Books*, 1 ECONOMICA 167, 169–70 (1934).

13. Rights last longer, the number of copyrightable works has increased, authors have broader rights to control uses, and penalties are harsher. Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1042 (2005).

14. *See* Jonathan Lethem, *The Ecstasy of Influence: A Plagiarism*, HARPER'S MAG., Feb. 1, 2007, at 59 ("[A]ppropriation, mimicry, quotation, allusion, and sublimated collaboration consist of a kind of *sine qua non* of the creative act, cutting across all forms and genres in the realm of cultural production."). Lethem builds a clever essay with plagiarisms to demonstrate that most expressive works are built from others. *Id.*

15. Eldred v. Ashcroft, 537 U.S. 186, 250 (2003) (Breyer, J., dissenting) (describing how it can be expensive to track down a copyright holder, who often cannot be found in any case).

16. BOYLE, *supra* note 6, at 8–9, 40–41.

17. *Id.* at 236.

18. Michele Boldrin & David K. Levine, *The Case Against Intellectual Monopoly*, 45 INT'L ECON. REV. 327, 348 (2004).

19. *See* BOYLE, *supra* note 6, at 198–99.

20. JESSICA LITMAN, DIGITAL COPYRIGHT 22–69, 122–45 (2001). Public choice

more non-excludable and non-rivalrous than they are in the analog world;[21] these industries use the fear of digitization's potential to destroy their business model as the rationale for blanket—and ever-expanding—copyright.[22] They are, in short, exploiting the incentive thesis underlying the need for copyright to set their agenda, an agenda that is often against the public good copyright is supposed to advance. And they are doing so without having to support their arguments with actual evidence.[23] It seems, then, that a good shot of empiricism is in order.[24] There is some doubt, after all, on the "universal applicability of copyright's incentive rationale."[25] But where is that evidence going to come from? Time cannot be run backwards to see what an industry would have looked like without strong intellectual property protection, to see how it might have fared if allowed to develop without government granted monopolies.[26] And almost everything that could be copyrightable subject matter has been made to be.[27] Almost everything, but not quite. There are some industries (a term I will use loosely to denote at least a group of people making a similar kind of expressive work)—fashion and the culinary arts, for instance—that, for whatever reason, do not enjoy strong intellectual property protection. How have they fared? Have they been doomed by the ruin the theory of public goods predicts and which copyrights are

theory, where legislation is more likely to be influenced by smaller but well-organized (and well financed) groups than by the public, is often given as a reason for industry capture of the legislative process. *See* OLSON, *supra* note 4, at 125–28.

21. *See* Trotter Hardy, *Not So Different: Tangible, Intangible, Digital, and Analog Works and Their Comparison for Copyright Purposes*, 26 U. DAYTON L. REV. 211, 233 (2001).

22. *See* BOYLE, *supra* note 6, at 54–82 (arguing that content-generating industries used the fear of piracy made possible by the Internet as fuel for rhetoric in expanding intellectual property protection).

23. *Id.* at 236.

24. *See*, *e.g.*, Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281, 322 (1970) (suggesting copyright justification "rests not upon proven need, but rather upon uncertainty as to what would happen if protection were removed").

25. NETANEL, *supra* note 8, at 86. *Cf.* ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION 182, 214–15 (1990) (arguing that private property rights or external regulations are not the only way to solve common-pool resource problems); Anthony Scott & James Johnson, *Property Rights: Developing the Characteristics of Interests in Natural Resources*, *in* PROGRESS IN NATURAL RESOURCE ECONOMICS 376, 377 (Anthony Scott ed., 1985) (explaining that economic models tend to ignore, for instance, the importance of convention and custom).

26. *Cf.* Vernon Smith, Comment, *after* Anthony Scott & James Johnson, *Property Rights: Developing the Characteristics of Interests in Natural Resources*, *in* PROGRESS IN NATURAL RESOURCE ECONOMICS 376, 414 (Anthony Scott ed., 1985) (arguing that when designing systems to deal with property rights systems, it is "hubris to design property rights in systems and impose them on the market," without considering how "interaction among interested parties" has created its own system).

27. *See* Jessica Litman, *The Public Domain*, 39 EMORY L.J. 965, 965–67, 998 (1990) ("Most arguments over the appropriate scope of copyright protection, unfortunately, occur in a realm in which empirical data is not only unavailable, but is also literally uncollectible.").

supposed to fix? Hardly. These industries manage to be innovative, creating lots of new expressive works. In doing so, they challenge, at least in some instances, the orthodox justification for granting copyrights.[28] This is not to say that the incentive thesis is fundamentally wrong, just that its application has been too sweeping, covering industries whose native idiosyncrasies might have led them to be innovative without copyright.[29]

Not many industries operating in intellectual property law's open areas have been written about, despite the seeming importance of identifying and cataloging them.[30] This article adds to that list by analyzing the reasons typeface designs have proliferated despite being unprotected by copyright. This undermines one of the links necessary to justify the over-broad copyright laws that have upset the balance between the economic and social costs of granting a monopoly and the benefit the public receives when more expressive works are made than otherwise would have been.[31] While one recent article by Professor Lipton has discussed typefaces in the context of intellectual property law's open areas,[32] that article does not focus on what has allowed typefaces to proliferate despite a lack of copyright protection. Instead, it essentially argues that the digitization of typefaces has meant that an industry that had previously operated in intellectual property's open areas no longer is, and that the typeface industry can therefore serve as an example of what will happen to other industries as they, too, digitize. However, this conclusion—one that does not further our understanding of why intellectual property law's open areas do not suffer the fate which classic economic theory predicts—is reached from premises that ignore some important facts (for example, the protection of computer fonts as software is not as much of an impediment in the copying of typeface designs as Professor Lipton assumes) that will be covered in this article.

Part I of this paper begins by defining some crucial terms related to typefaces to avoid any confusion. It then establishes that typeface designs are, in fact, an open area of intellectual property law, and that they are likely to remain unprotectable by copyright—despite belief in some circles that they could be—because of some unconsidered functionality

---

28. Kal Raustiala & Christopher Sprigman, *The Piracy Paradox: Innovation and Intellectual Property in Fashion Design*, 92 VA. L. REV. 1687, 1691 (2006).

29. *See id.* at 1762; BOYLE, *supra* note 6, at 213.

30. *See* Raustiala & Sprigman, *supra* note 28, at 1765, 1776–77.

31. LANDES & POSNER, *supra* note 2, at 69 ("A fundamental task of copyright law [is] . . . to strike the optimal balance between the effect of copyright protection in encouraging the creation of new works by reducing copying and its effect in discouraging the creation of new works by raising the cost of creating them.").

32. Jacqueline D. Lipton, *To © or Not to ©? Copyright and Innovation in the Digital Typeface Industry*, 43 U.C. DAVIS L. REV. 143 (2009).

problems. I further argue that copyright, if it were granted by legislation or allowed by case law, could both stagnate the industry and leave the typefaces that require the most investment unprotected anyway. This paper then shows that despite the copyrightability of digitized typefaces as software, the typeface designs themselves are unprotected by copyright. There are, for instance, other ways to copy a typeface design than by duplicating a digital file in which that design may reside. In fact, plagiarizing typefaces by other means is common. Part I concludes by demonstrating that typefaces do indeed proliferate.

Part II details the mechanisms that have allowed typefaces to proliferate. It begins with an argument for the uniqueness of typefaces among other expressive works unprotected by intellectual property laws. They are functional, yet unlike other functional expressive works, they exist primarily as non-rivalrous digital files. This uniqueness allows several of the mechanisms at work in intellectual property law's other open areas to collaborate in fostering significant innovation in typeface designs. Part II.B shows how changes in technology have always required new typefaces to address the limitations inherent in each technology. It then shows how technology, especially digitization, made innovation in the industry possible, and sometimes compelled it. Part II.C discusses the ways in which industry norms can mitigate copying among typeface designers. It surveys the general theory of norms, which predict that norms would be somewhat effective among an industry with the characteristics of typeface design. It then details some industry norms, and demonstrates how they are enforced. Part II.C concludes by noting that even if norms fail, there are some aspects of typefaces that can be difficult to reproduce. Part II.D shows that typefaces have always had to be made to conform to aesthetic movements. Furthermore, other changes, including the needs of advertising, have moored the need for new typefaces to quick-moving, fashion-like cycles, and that these cycles are accelerated by plagiarism and file sharing. Part II.E argues that to the extent prices for typeface designs have fallen, file-sharing is not to blame. The biggest culprit is the bundling of typefaces with software to make the software more attractive. Typefaces are, in fact, sometimes specifically made to sell that more lucrative product. Part II.F concludes with a brief discussion of non-monetary incentives, though mostly to give legitimacy to the amateur creations that have formed a large portion of new typeface designs since the digitization of typeface production.

I.   THE IP PROTECTION OF TYPEFACE DESIGNS

About the first thing anybody does when they write about typefaces in the context of copyright is to define some crucial terms, though

sometimes these definitions are ghettoized to the footnotes.[33] The usual definitions straighten out the modern conflation of the words *typeface* and *font*. Historically, a *typeface* was "a set of fonts of related design," while a *font* was "a set of characters of a given typeface, all of one particular size and style."[34] For instance, Times New Roman would have been a typeface, while Times New Roman 12-point size would have been a font within the Times New Roman typeface family, and Times New Roman 10-point another. Today, largely because digitization has meant that different-sized characters can be created from one set of master characters rather than being made separately by hand or machine, *font* has generally come to refer to what before had been differentiated.[35] One problem with trying to revert to the old definition, however, is that *font* has an alternative sense beyond that already given: it has also been defined as the physical embodiment of a typeface, whether in metal type or a digital file.[36] These alternative senses are traceable to the fact that before digitization a font could only have been embodied in a separately made set of metal type. Before a 1992 regulation issued by the Copyright Office saying that it would register computer font files and a 1998 district court case ruling that computer font files are copyrightable as software,[37] the alternative uses of the word *font* was not much of an issue in a copyright context. But, since then, ignoring or glossing these different senses could cause confusion about just what in typeface design is copyrightable and what is not.[38]

For that reason, I am defining how I will use *font* and *typeface* at the outset. I will keep to the traditional usage of typeface. It will refer specifically to all the ranges of fonts of the same family. What this in effect means is that *typeface* will refer to the design, the creative expression, of a set of related fonts. *Font* will strictly be used to refer to one size and weight of a set of characters of a typeface. A digital file describing a set of characters will not be called a *font* as it usually is, but,

---

33. *See*, *e.g.*, *id.* at 148.

34. PHIL BAINES & ANDREW HASLAM, TYPE AND TYPOGRAPHY 6 (2002).

35. *See* ROBIN KINROSS, MODERN TYPOGRAPHY 169 n.9 (Hyphen Press 2004) (1992).

36. *Compare* Terrence J. Carroll, Comment, *Protection for Typeface Designs: A Copyright Proposal*, 10 SANTA CLARA COMPUTER & HIGH TECH. L.J. 139, 141 n.2 (1994) (defining a font as an article "in which a typeface resides as the implement of printing technology, regardless of medium or form") (quoting H.R. 1790, 102d Cong. (1st Sess. 1991)), *with* BAINES & HASLAM, *supra* note 34 (defining a font as a "set of characters of a given typeface, all of one particular size and style").

37. *See* Registrability of Computer Programs that Generate Typefaces, 57 Fed. Reg. 6,201–02 (Feb. 21, 1992); Adobe Sys. Inc. v. S. Software, Inc., No. C 95-20710 RMW (PVT), 1998 WL 104303 (N.D. Cal. Feb. 2, 1998).

38. *See*, *e.g.*, Lipton, *supra* note 32, at 163 (where loose usage of "typeface" and "font" was partly responsible, I think, for the mistaken premise that because computer fonts receive copyright protection that typeface designs can no longer be copied legally).

to differentiate it from a mere font, a *computer font*.[39] If I am referring to a non-digital embodiment (in metal, for instance) of a typeface I will use the term *type* or *metal type*, depending on whether it is obvious by the context what's being referred to.[40]

A.   *Typeface Designs are Unprotected by IP, and Are Likely to Remain So*

Though the issue is somewhat confused, typefaces are generally considered to be and are in fact treated as uncopyrightable. This article will take for granted the uncopyrightability of typefaces designs.[41] Furthermore, other methods of intellectual property protection—trademark law, state unfair competition law, and design patents—offer either little, no, or impractical protection.[42] Neither do contractual licensing provisions. Typical licenses for computer fonts establish the extent to which they can be modified,[43] how many computers they can be installed on, and whether and how they can be embedded in documents, such as PDFs.[44] These terms only affect computer fonts as software; they

---

39. Wikipedia suggested this classification. *See* Wikipedia, *Computer Font*, http://en.wikipedia.org/wiki/Computer_font (last visited Mar. 7, 2010).

40. *See* BAINES & HASLAM, *supra* note 34 ("Type is the physical object, a piece of metal with a raised face at one end containing the reversed image of a character.").

41. Well, not entirely for granted. The Copyright Office has issued regulations listing typefaces as works that it will not register. 37 C.F.R. § 202.1(e) (1992). The deference courts are required to give to the interpretation of a statute by regulatory agencies whose job it is to implement the statute will make it difficult for anybody to successfully challenge, in court, the Copyright Office's decision that typeface designs are not copyrightable. *See* Chevron U.S., Inc. v. Natural Res. Def. Council, Inc., 467 U.S. 837, 865 (1984); Bonneville Int'l Corp. v. Peters, 347 F.3d 485, 486 (3d Cir. 2003) (suggesting that courts should give the Copyright Office deference on their determinations of what is copyrightable). For some analyses and historical discussion on the copyrightability of typefaces, *see* 1 MELVILLE NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 2.15 (2009); 2 WILLIAM PATRY, PATRY ON COPYRIGHT § 4.19 (2009).

42. *See* Leonard Storch Enter., Inc. v. Mergenthaler Linotype Co., 1979 WL 1067 (E.D.N.Y. Apr. 5, 1979) (federal law generally preempts state unfair competition claims involving copied typeface designs); MARSHALL A. LEAFFER, UNDERSTANDING COPYRIGHT LAW 126 (2005) (noting that design patents have a high rate of being invalidated when challenged in federal court); Lipton, *supra* note 32, at 182–84 (trademark law does not provide protection to typeface designs); Lipton, *supra* note 32, at 178–82 (design patents probably do not provide protection to computer fonts, and even if they do, they are difficult to obtain, making them impractical); J.H. Reichman, *Legal Hybrids Between the Patent and Copyright Paradigms*, 94 COLUM. L. REV. 2432, 2460 (1994) ("[T]he [design] patent process has proved too rigid, slow, . . . and too strict in excluding the bulk of all commercial designs on grounds of obviousness.").

43. Typographers and graphic designers commonly need to modify a computer font slightly to suit a particular purpose or remedy a defect. *See* ROBERT BRINGHURST, THE ELEMENTS OF TYPOGRAPHIC STYLE 198–208 (3d ed. 2004). This is generally acceptable according to a license's terms. But, licenses prohibit the modification of a computer font to the extent that it would, in effect, become a different design.

44. For examples of typical licenses, see LINOTYPE, LICENSE AGREEMENT FOR FONT

do not affect the design of a typeface itself. Anyone, even those to whom a computer font has been licensed, is free to copy a typeface design as long as he is not doing so by copying the digital computer font file. "Reverse engineering" a computer font by copying the design it produces cannot be prohibited.[45] This is not even to mention the difficulty of enforcing licenses against third parties who are violating the *de jure* terms of a license.[46]

In any case, no typeface is copyrightable under the 1976 Copyright Act if it is too functional. Section 101 of the Copyright Act defines the scope of copyrightable pictorial, graphic, or sculptural (PGS) works.[47] The crux of the definition is that, for PGS works deemed to be "useful articles," only the portions of them not dictated by their "mechanical or utilitarian aspects" and which are also "identifi[able] separately from, and capable of existing independently of, the utilitarian aspects of the article" are copyrightable.[48] This is the "separability" test. In other words, utilitarian PGS works only receive copyright protection if they have aesthetic elements that are not dictated by their functionality, and only those aesthetic elements are protectable. The suggestion by Nimmer[49] (and others) that typefaces can sometimes qualify as PGS works, and thus be subject to the separability test, makes at least one significant assumption. That assumption—that a typeface's design is dictated by more than merely functional considerations—is, not surprisingly, the basis for many arguments that typefaces can be copyrightable subject matter.[50] If a typeface design is influenced by aesthetic decisions that have nothing to do with their status as the "building blocks" of words,[51] the argument goes, then that typeface design should have enough features that would render it a copyrightable PGS work. There are, of course, direct counter-arguments to this facially valid though simplistic reasoning: some contend that a typeface's job is always to convey

---

SOFTWARE (2003), *available at* http://www.fontshop.com/help/licenses/linotype/.

45. *See* Sony Computer Entm't, Inc. v. Connectix Corp., 203 F.3d 596, 608 (9th Cir. 2000).

46. *See* Lipton, *supra* note 32, at 186–88.

47. PGS works are "two-dimensional and three-dimensional works of fine, graphic, and applied art . . . ." 17 U.S.C. § 101 (2010).

48. *Id.*

49. NIMMER & NIMMER, *supra* note 41.

50. There is no shortage of typeface companies or industry interest groups arguing that typefaces should be protected by copyright law. There have also been efforts to protect typeface design through legislation protecting industrial design. *See* Rudy VanderLans, *The Trouble with Type*, 43 EMIGRE (1997), *reprinted in* TEXTS ON TYPE: CRITICAL WRITINGS ON TYPOGRAPHY 223, 223–27 (Steven Heller & Philip B. Meggs eds., 2001) (explaining that typeface designers believe that typefaces will be underproduced without copyright protection).

51. *See* Dan L. Burk, *Expression, Selection, Abstraction: Copyright's Golden Braid*, 55 SYRACUSE L. REV. 593, 615 (2005).

information, so typefaces are always functional;[52] a variant is that the *sine qua non* of typefaces is legibility, so that a typeface can never be other than primarily functional.[53] As one typeface designer has said, "Letters are legible. If they are not legible, then they are not letters."[54]

My purpose in rehashing some of this is not to evaluate the merits of these arguments under the current copyright regime. Rather, my purpose is to show that the reasons given for typefaces either being or not being mostly utilitarian have been too narrowly conceived, omitting other ways in which typefaces have functional characteristics. The furthest anyone has gone in this regard is to mention studies demonstrating that typefaces designed for extended reading (these are known as text typefaces,[55] Times New Roman being an example) are all almost equally readable, in terms of how long it takes to read a given text. If one text typeface, whose chief design consideration is avowedly though not actually functional, then how can it be said that typeface designs on the whole are functional?[56] But this is not the whole story when it comes to functionality. Consider, for instance, a typeface for highway signs designed to mitigate the effects of halation (glare, basically) so that signs are readable at greater distances, especially at night.[57] AT&T liked the openness and friendliness of the design so much that it commissioned a slightly modified version of it to serve in its new logo, which, the company hopes, will offset its stodgy image.[58] That openness and friendliness was partly a result of the typeface's large counters (the enclosed spaces of a letter, like the inside of an "o" or an "a") needed to

---

52. *See*, *e.g.*, *id.* ("A letter . . . is simply a building block for larger units, words, that convey information. In the same way, when we give copyright protection to the design of buildings, we do not protect individual bricks because they are fungible. We protect collections of bricks. At this atomistic level, letters look very functional.").

53. *See*, *e.g.*, 15 OMNIBUS COPYRIGHT REVISION LEGISLATIVE HISTORY 1166, 1230 (1977) [hereinafter COPYRIGHT LEGISLATIVE HISTORY] (statement of position of Howard B. Rockman, Attorney for Castcraft Industries, Inc.).

54. Véronique Vienne, *Soup of the Day*, METROPOLIS (1995), *reprinted in* LOOKING CLOSER 2: CRITICAL WRITINGS ON GRAPHIC DESIGN 9, 11–12 (Michael Bierut et al. eds., 1997) (quoting Dutch typeface designer Peter Merterns).

55. *See* Carroll, *supra* note 36, at 145–47. Text typefaces usually include serifs, which are thought to aid in readability by providing more differentiation among letters and words, and by guiding the eye down a line of text. "Serifs" are the finishing strokes at the end of a letter's main strokes. FREDERICK COMPTON AVIS, TYPE FACE TERMINOLOGY 40 (1965). Text typefaces are contrasted with display typefaces, which are usually serif-less and are meant for setting short amounts of text, like headlines, captions, or advertising, meant to grab the reader's attention.

56. What if a text typeface was explicitly designed to maximize readability, even if a study shows the design has a negligible effect on readability? *See* SIMON LOXLEY, TYPE: THE SECRET HISTORY OF LETTERS 71 (2004) (describing a 19th century text typeface specifically designed with readability in mind).

57. *See* Joshua Yaffa, *The Road to Clarity*, N.Y. TIMES, Aug. 12, 2007, § 6 (Magazine), at 36.

58. *Id.*

mitigate the effects of halation. The design's aesthetics, then, are inextricably linked to the design's functionality. There are endless similar examples of typefaces, like the one for the highway sign, designed according to functional considerations that are not as simple as whether text typefaces can be read quickly in a book. It is one of the forces driving innovation in type design. I return to this subject later,[59] but suffice it to say for now, though, that the effect these kinds of characteristics have on the separability test may be so intractable that typeface designs are destined to remain in intellectual property law's open areas, despite industry efforts to the contrary.

Aside from the standard-fare doctrinal considerations for not allowing typefaces to be protected by copyright, there are practical considerations too. As the famous, early 20th century typeface designer Frederic Goudy said on seeing the famed letters carved in the Trajan column: "The old fellers stole all our best ideas."[60] The problem, in other words, would be in deciding when a typeface infringes on another by being derivative of it or substantially similar to it.[61] In a sense, all typefaces are derivative of the ideal alphabet. But, to the extent that there is somewhere an ideal, Platonic letter-form, it is unknowable.[62] This fundamental fact of typefaces—that it is impossible to determine to what extent a design incorporates the Platonic letter-form—is the first hurdle that any judge trying to separate uncopyrightable public domain elements from copyrightable expression will have to face. This problem aside, so many typefaces are already redesigns of, or references to, historical typefaces[63] that in many cases determining what's derivative of what and what's substantially similar to what would be a quagmire.[64] This is to say nothing of the fact that the sheer abundance of typefaces, and that their shape is constrained by the alphabet, means there are bound to be some typefaces that look like others.

To give an example of the difficulty involved, imagine having to

---

59. *See infra* Part II.B.1.

60. LOXLEY, *supra* note 56, at 96. The Trajan column was erected in 114 A.D.

61. *See* Lipton, *supra* note 32, at 166 (noting the difficulty of applying substantial similarity tests to typefaces designs).

62. *See* WARREN CHAPPELL & ROBERT BRINGHURST, A SHORT HISTORY OF THE PRINTED WORD 107–08 (2d ed. 1999).

63. There are, for instance, at least 15 to 20 versions of Garamond made by various type foundries of varying fidelity to Claude Garamond's original 16th century design, and still more that are a version of Garamond, but with a different name. Jerry Kelly, *Adobe Garamond: A New Adaptation of a Sixteenth-Century Type*, 13 PRINTING HIST.: THE J. OF AM. PRINTING ASS'N (1991), *reprinted in* TEXTS ON TYPE: CRITICAL WRITINGS ON TYPOGRAPHY 54, 55–56 (Steven Heller & Philip B. Meggs eds., 2001).

64. This is not only a new problem, but an historical one as well. *See* LOXLEY, *supra* note 56, at 62 (describing how the house typeface of Louis XIV was hard to police because variations of it were often subtle).

judge, say, Adobe's Garamond Premiere Pro and Adobe's Arno Pro.[65] The Garamond is a meticulously researched recreation of the early 16th century original; Arno Pro is a modern typeface designed "in the tradition" of 15th and 16th century northern Italian designs. To the layman, the two are almost exactly the same, though someone sensitive enough might note that they have a slightly different feel. Both are warm, humanist, typefaces of Renaissance provenance, but Garamond could be said to be a little more elegant, and Arno a little more authoritative. This owes largely to their serifs. The serifs of the two are typically finished differently, for instance: Arno's are sharper while Garamond's are more rounded. At normal text sizes that difference could be measured in fractions of a millimeter. That's not even to mention that the manner in which their serifs terminate, or their shape as a whole, are necessarily unique. And what of the fact that both, being humanist typefaces, feature axes (drawing a line in an "o" from the points, on its top and bottom, where the stroke is the thinnest will reveal the letter's axis) whose angles mimic those that would be made if handwritten? Can you copyright the angle of the axis of an "o"? Ignoring for the moment that Garamond is a copy of a public domain typefaces, it seems that no single element of either typeface would be, standing on its own, copyrightable. Of course, there are plenty of other areas of creative expression that require experts to suss out whether a work is derived from or substantially similar to another, or to determine that the selection and arrangement of non-copyrightable elements is copyrightable, and it has been suggested that typeface designs should be no different.[66] But, typefaces are hard to describe technically and objectively, and they resist classifications that are too rigid.[67] The differences between them can be very subtle and hard to articulate.[68] What to one expert is piracy (making only trivial changes to an existing design, for instance),[69] is to another a

---

65. *See* Adobe.com, Garamond Premier Pro, http://www.adobe.com/type/browser/ landing/garamond/garamond.html (last visited Mar. 10, 2010) [hereinafter Garamond Premier Pro] (providing description and samples of Garamond Premiere Pro); Adobe.com, Arno Pro, http://www.adobe.com/type/browser/landing/arno/arno.html (last visited Mar. 10, 2010) (providing description and samples of Arno Pro).

66. *See, e.g.*, COPYRIGHT LEGISLATIVE HISTORY, *supra* note 53, at 1231.

67. *See*, *e.g.*, HELVETICA (Swiss Dots 2007) (a documentary about the typeface Helvetica; comments of Hoefler and Frere-Jones).

68. ANTHONY CAHALAN, TYPE, TRENDS AND FASHION: A STUDY OF THE LATE TWENTIETH CENTURY PROLIFERATION OF TYPEFACES 91 (2008). In fact, when type designers as a community have had to judge whether one design was copied from another, they sometimes cannot agree, despite some very close analyses. *See* Discussion thread of Typophile, Bloody Rip Off Artists!, http://typophile.com/node/36209 [hereinafter Bloody Rip Off Artists].

69. Many typefaces are thought to be pirated, minor variations of existing designs. Lillian Abbott Pfohl, *Serif Wars: An Argument for the Protection of Typeface Design,* 2001 SYRACUSE L. & TECH. J. 1, 24 n.119 (2001).

distinct and, at least according to the norms that guide the industry, permissible variation.

The result of copyright protection for typefaces might therefore be that the only protectable typefaces are only the most novel, least useful, ones, such as typefaces of the 1970s and 80s born out of postmodern, deconstructionist theories,[70] or silly amateur novelty designs (letters superimposed on Christmas trees!).[71] Ironically, the typefaces that require the most investment and time to create—text typefaces meant for professionals—would be the hardest to protect, owing the most, as they do, to historic designs and, legibility being paramount, adhering closest to an ideal letter-form. Because the cost of clearing proposed designs, or becoming entangled in litigation after their release, might increase the cost of production, protecting typefaces might also drive out the independent designers to whom the recent boom in typeface production has been partly attributed.[72] It could also strangle future designs, since typefaces typically build only incrementally on previous ones:[73] new typefaces require that designers have access to existing designs, if only to reshuffle old elements in new ways. The better question to ask in deciding whether to be in favor of copyright protection for typefaces might not be whether enough typefaces are created, but if the right kinds of typefaces are created.[74] Copyright protection might make typefaces more novel, and therefore less useful, at least for certain purposes.

B.   *Computer Fonts Are (Probably) Protected By Copyright*

The belief that computer fonts are protected is based on Copyright Office regulations reversing an earlier policy of refusing registration to computer fonts[75] and a district court decision, *Adobe Systems, Inc. v. Southern Software, Inc.*, citing the Copyright Office's decision, finding

---

70. *See* VanderLans, *supra* note 50, at 224.

71. *See* Lipton, *supra* note 32, at 156–60 (giving examples of novelty fonts that might pass the separability test, but whose worth, by even lax standards, is dubious).

72. *See* Mark S. Nadel, *How Current Copyright Law Discourages Creative Output: The Overlooked Impact of Marketing*, 19 BERKELEY TECH. L.J. 785, 803 (2004).

73. Lipton, *supra* note 32, at 163.

74. *See* Shubha Ghosh, *Deprivatizing Copyright*, 54 CASE W. RES. L. REV. 387, 396 (2003) (suggesting that what's important when considering whether expressive works should receive protection is to ask not whether more or less of the work would be produced, but the nature of works that would be produced).

75. Registrability of Computer Programs that Generate Typefaces, *supra* note 37 ("After a careful review of the testimony and the written comments, the Copyright Office is persuaded that creating scalable typefonts using already-digitized typeface represents a significant change in the industry since our previous Policy Decision . . . . For example, the creation of scalable font output programs to produce harmonious fonts consisting of hundreds of characters typically involves many decisions in drafting the instructions that drive the printer. The expression of these decisions is neither limited by the unprotectable shape of the letters nor functionally mandated.").

them copyrightable subject matter.[76] The reversal of the Copyright Office can be explained by changes in the ways computer fonts are generated. Previously, computer fonts were mostly bitmapped images. A bitmapped computer font is really nothing more than the "computerized representation of a typeface,"[77] a kind of static picture where a separate font file exists for every size and weight of every letter (it was, in this respect, a lot like metal type).[78] In the interim between the Copyright Office's original position and their reversal, computer fonts had largely ceased being bitmapped, and instead had become outlined.

Outline fonts describe the lines and curves of letters, allowing the same computer font file to describe the same letter in all sizes, whether it's on screen or residing in a printer's memory waiting to be printed. To simplify, computer outline fonts are a set of points, selected by the font's designer, describing the outside of a letter. The advantage of outlined computer fonts is that since only the outline of the letter is described, a character can be enlarged or shrunk by simply increasing or decreasing the distance between the points. For displaying or printing, software connects these lines, and shades in the letter. In some instances, the points a font editor (if he is re-digitizing an existing computer font) or "internal software" (if the typeface is being designed from scratch) selects are entirely dictated by the shape to be drawn. It would not make any sense, for instance, to represent a straight line with anything but two end-points. But describing curves is a different matter, requiring the editor or the software to judge the best and most efficient way to place points. Other software translates these efforts and assigns coordinates that become the computer font file. The code of the computer font file is the end result.[79]

The Copyright Office, and the district court case which soon followed, reasoned that because sometimes the font editor makes some choices about where to place points there is enough creativity involved— the creativity missing in bitmapped computer fonts—to make the resulting code copyrightable.[80] But it's not entirely clear that computer

---

76. Adobe Sys. Inc. v. S. Software, Inc., No. C 95-20710 RMW (PVT), 1998 WL 104303 (N.D. Cal. Feb. 2, 1998).

77. Jonathan L. Mezrich, *Extension of Copyrights to Fonts—Can the Alphabet Be Far Behind?*, 4 COMP. L. REV. & TECH. J. 62, 64 (1998).

78. Wikipedia, *supra* note 39; *see also* Policy Decision on Copyrightability of Digitized Typefaces, 53 Fed. Reg. 38,110 (Sept. 29, 1988) (noting the Copyright Office's 1988 decision not to register computer fonts).

79. *See*, *e.g.*, *Adobe Sys., Inc.*, 1998 WL 104303 at *4–*5 (explaining the process of codifying computer fonts).

80. *Id.*; Registrability of Computer Programs that Generate Typefaces, 57 Fed. Reg. 6201–02 (Feb. 21, 1992) (explaining that the code which embodies the selection of the points that describe a letter, "is . . . registrable as a computer program"); *see also* Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 345 (1991) (establishing that to be copyrightable a work,

fonts are copyrightable. The Copyright Office and the district court decision take it for granted that computer fonts are software. The prior refusal was based on the idea that bitmapped computer fonts, though software, were not creative enough. Some argue, however, that the code that describes a modern outlined computer font is not software at all, but a set of data points.[81] If that's accurate, protecting a computer font would be like protecting metal type because of the type-maker's decisions about how to best hold his chisel when carving it. The counter-argument is that the data points are a set of instructions that tells a computer or printer what to display or print and, as such, are properly classifiable as software.[82] The difference between labeling a computer font software or a set of data points is somewhat semantic. The type design industry, for its part, sells very hard the idea that computer fonts are software.[83]

C.   The Protection of Computer Fonts Does Not Prevent Typeface Designs From Being Copied

Protection for computer fonts is not the same thing as protection for typeface designs themselves, however. There are other ways to copy, reproduce, or "reverse engineer" a typeface design than copying or modifying a computer font file. In fact, the digitization of typeface design has made the legal copying of typeface designs, on the whole, infinitely easier.[84] If the history of type design is anything, it's one of

---

among other things, has to "possess[] at least some minimal [and indeed very low] degree of creativity").

81. *See*, *e.g.*, Luc Devroye, School of Computer Science, McGill University, Legal, Copyright and Trademark in the Type World, http://cg.scs.carleton.ca/~luc/legal.html (last visited Mar. 9, 2010) (under the heading "This is money").

82. *See*, *e.g.*, Philip W. Snyder, *Typeface Design After the Desktop Revolution: A New Case For Legal Protection*, 16 COLUM.-VLA J.L. & ARTS 97, 114 n.80 (1991). Another argument against the protectability of computer fonts is that the methods of making computer fonts have changed since *Adobe Systems* was decided (the events leading to the case occurred largely in 1995, *Adobe Sys., Inc.*, 1998 WL 104303 at *3), or that the computer fonts involved were produced in a way that would be atypical today. The upshot of either scenario is that font editors, who in the case seem to be a kind of technician, no longer—or don't often—select points according to the shape of a letter. Rather, modern font creation software might automatically place points when it exports a typeface designer's typeface into a computer font.

83. *See*, *e.g.*, Adobe.com, Anti-Piracy Initiative, http://www.adobe.com/aboutadobe/ antipiracy/fonts.html (last visited, Mar. 9, 2010); Adobe.com, Font Folio 11, http://www.adobe.com/products/fontfolio/ (last visited Mar. 9, 2010) [hereinafter Font Folio] (listing computer fonts for sale as "software"). The industry had been pushing the Copyright Office for protection of computer fonts since the 1980s. Snyder, *supra* note 82, at 110.

84. *But see generally* Lipton, *supra* note 32. Lipton argues that the protection of computer fonts has transformed what had previously been an industry operating in intellectual property law's open areas into one that no longer is. This argument is close to being based on the premise that protection for computer fonts has meant that typefaces can no longer be legally copied.

copying, plagiarism, and revivals.[85] But from the advent of movable type in the 15th century until the early 19th century, the act of designing a typeface was, by far, the least labor intensive part of making type. The amount of skill, labor, and time it took to actually make type in this era is shocking.[86] Creating a single font (one style and weight in a typeface family) would take a punchcutter—who had a unique set of skills, part metallurgist, part sculpture, part metalsmith[87]—800 hours of full-time work.[88] It took William Caslon 14 years to cut his namesake typeface.[89] From the advent of movable type in the middle of the 15th century until the latter 19th century, the process of making type essentially did not change, though the work did become more specialized and compartmentalized, and therefore somewhat faster.[90] There was, in other words, "a very high bar to plagiarism."[91] Copying a complete typeface family would take almost as long as it took to make it in the first place—years.[92] While the introduction of the Monotype and Linotype typesetting machines at the end of the 19th century greatly decreased the time it took to make type for text-setting, these were not technologies that aided copying designs in any way.[93] But, at the end of the 19th century, the pantograph was introduced. It allowed a person unskilled in the art of making type to engrave punches and matrices by tracing large drawings of letters.[94] So, as long as somebody could draw, or beginning

---

85. LEWIS BLACKWELL, 20TH CENTURY TYPE 126 (3d ed. 2004) (noting that copying typefaces is as old as type-founding itself); *see* ALEXANDER LAWSON, ANATOMY OF A TYPEFACE 132–33 (1990) (noting that 15th and 16th century type designers used existing designs as models for their own).

86. The time it took to make physical type, especially considering that punches had to be made for every size of letter desired, also meant that any type designer would enjoy a considerable lead time over a plagiarist. *See* Pfohl, *supra* note 69, at 5–6. Since the process of making type was largely industrial, it required significant overhead. The amount of money it took to put out a complete typeface in all weights and sizes was several hundred thousand dollars. A would-be plagiarist, therefore, had little economic incentive to copy a design, especially considering the lead time advantage the original designer had. *See* COPYRIGHT LEGISLATIVE HISTORY, *supra* note 53, at 1168.

87. *See* CHAPPELL & BRINGHURST, *supra* note 62, at 266. Gutenberg had been a goldsmith. CAHALAN, *supra* note 68, at 13.

88. LAWSON, *supra* note 85, at 386–89.

89. CAHALAN, *supra* note 68, at 14.

90. LAWSON, *supra* note 85, at 390–97.

91. Scott Thurm, *Copy This Typeface? Court Ruling Counsels Caution*, WALL ST. J., July 1998, at B1 (quoting Charles Bigelow, a font designer who used to teach typography at Stanford University).

92. *See* Rudy VanderLans, *Copping an Attitude*, 38 EMIGRE (1996), *available at* http://www.emigre.com/Editorial.php?sect=1&id=2.

93. *See* J. Abbot Miller & Ellen Lupton, *A Natural History of Typography*, *in* LOOKING CLOSER: CRITICAL WRITINGS ON GRAPHIC DESIGN 19, 19 (Michael Bierut et al. eds., 1994) (describing how the Linotype machine worked).

94. John Downer, *Call It What It Is*, EMIGRE (2003), *available at* http://www.emigre.com/Editorial.php?sect=2&id=1. A punch is a form from which type can be made.

about 1890, photographically enlarge,[95] a letterform, typefaces could be copied with less skill and in less time than in the previous 400 years. But it was really not until the middle of the last century, with the development of phototype—where a copyist could literally photograph and create a typeface from printed letters, though not necessarily with great results—that any reasonably feasible way to reproduce typefaces existed.[96]

Regardless of the relatively difficult process of copying through the development of phototype, type foundries often had enough incentive to make the process worth their while. For one, many of the machine typesetting systems in use from the end of the 19th century to the beginning of phototype era in the mid 20th century were proprietary, each only able to use type specifically made for it. To stay competitive, Monotype and Linotype—two of the biggest type foundries of the day, making type primarily to sell their machines—would often have to make their own versions of popular typefaces that existed only for the other manufacturer's typesetting system.[97] Each had to have a "convincing library" of typefaces to sell their machines.[98] Similarly, in the early 20th century's explosion of display faces, foundries had trouble keeping up with demand without making at least superficial copies of other foundries' designs.[99] Piracy and mimicry was especially common in Victorian America,[100] a fact at least partly attributable to the high cost of importing metal type—which is very heavy—from overseas, where most new designs at the time originated.[101]

---

95. Posting of William Berkson to Typophile, Old-school Type "Piracy," http://dev.typophile.com/node/31101 (Feb. 3, 2007, 07:39) [hereinafter Posting of William Berkson].

96. *See* Snyder, *supra* note 82, at 100 n.11 (explaining that phototype reduced manufacturing costs, and therefore the cost to copy by 90 percent or more); *id.* at 101 n.12 (explaining that phototype enabled foundries to routinely copy other foundries' designs). Phototype begat the first industry effort to lobby for copyright protection of typeface designs. *See* Emily King, *New Faces: Type Design in the First Decade of Device-Independent Digital Typesetting* (1999) (unpublished Ph.D. dissertation, Kingston University), *available at* http://www.typotheque.com/articles/new_faces_abstract.

97. Posting of William Berkson, *supra* note 95. This phenomenon, where the manufacture of a product using typefaces makes typefaces to help sell the product, repeats itself with the advent of the personal computer. *See infra* Part II.E.

98. King, *supra* note 96.

99. *See* LAWSON, *supra* note 85, at 337. ATF, formed as a conglomeration of many typefoundries in the 1920s, was widely known to have plagiarized European typefaces through the 20s and 30s. *See* David Pankow, *A Face by Any Other Name Is Still My Face: A Tale of Type Piracy*, 19 PRINTING HISTORY: J. OF THE AM. PRINTING HIST. ASS'N (1998), *reprinted in* TEXTS ON TYPE: CRITICAL WRITINGS ON TYPOGRAPHY 239, 247–49 (Steven Heller & Philip B. Meggs eds., 2001).

100. STEVEN HELLER & LOUISE FILI, TYPOLOGY: TYPE DESIGN FROM THE VICTORIAN ERA TO THE DIGITAL AGE 22–26 (1999).

101. STEVEN HELLER & ANNE FINK, FACES ON THE EDGE: TYPE IN THE DIGITAL AGE 108 (1997).

Computer fonts can obviously be copied by duplicating the digital file which contains them. As described above, this probably infringes the copyright in the computer font as software. But there are other ways of copying a typeface digitally that are completely legal, and relatively trivial for someone who has, like any typeface designer would, the right technical competence. For one, any typeface that can be seen can be recreated from scratch with font editing software. This, however, requires a certain amount of skill, and it's difficult to get an accurate, faithful copy.[102] There is a much easier way. Namely, printed typefaces can be scanned into a computer, imported into font design software, manipulated or refined, and then saved as a computer font file.[103] Copying that used to cost a quarter million dollars can now be done much more inexpensively.[104]

While obviously this process is not one a typical consumer would endure to get a typeface he fancied—especially since the computer font can probably be found somewhere on the Internet—it is one that might be undertaken by someone, like the Monotype and Linotype of yore, with enough motivation. Knockoffs are often made, for instance, to avoid licensing fees.[105] When the Macintosh was introduced in 1984, Apple created pastiches of existing typefaces for just this reason.[106] Every major foundry, and Apple and Microsoft, makes a version of the ubiquitous Times New Roman and Helvetica (Microsoft's Arial is a knockoff of Helvetica) to stay competitive or to avoid licensing fees.[107] It's also common for a company that wants to use a particular typeface for advertising or corporate branding to commission a designer to copy it if its license is too restrictive, limiting, for instance, its use in a corporate ad campaign or on merchandise.[108] And, of course, foundries of all sizes

---

102. *See* Kathleen Tinkel, *The Font Pirates vs. Adobe: A Victory for the Good Guys*, MACWEEK, Feb. 16, 1998, at 14.

103. BAINES & HASLAM, *supra* note 34, at 101. In fact, there is even software solely dedicated to this task, promising to turn a graphic from a scanned image into a computer font in "six simple steps." *See* FontLab, ScanFont, http://www.fontlab.com/font-converter/scanfont/ (last visited Mar. 9, 2010).

104. Thurm, *supra* note 91. However, twenty hours worth of work, for instance, might not produce a good, functional computer font from a scanned copy. Posting of Mark Simonson to Typophile, The High Price of Piracy, http://typophile.com/node/15647 (Oct. 17, 2005, 11:56) (Mark Simonson, the poster, is a well known type designer).

105. Mark Simonson Studio, The Scourge of Arial, http://www.ms-studio.com/articles.html (last visited Apr. 14, 2010).

106. LOXLEY, *supra* note 56, at 229–30.

107. *See* LAWSON, *supra* note 85, at 270. The biggest foundries often have historically had the worst reputation for copying designs, perhaps because they have the most to lose if they are not competitive with other foundries. *See, e.g.*, Devroye, *supra* note 81 (under the heading "Monotype's copies [sic] of fonts") (Mark Simonson noting that Monotype created its own version of many popular fonts , including Helvetica and Futura , at Microsoft's request, so that the latter could avoid some licensing fees).

108. *See* P22 End User Agreement, http://www.p22.com/support/license.html (last visited

make knockoffs, especially of popular designs, simply to sell them.[109]

D.   *Despite a Lack of IP Protection, Typefaces Proliferate*

Typeface designs are unprotected, and probably unprotectable, by copyright, and the copyrightability of computer fonts is not a backdoor to protecting the designs themselves. So, how has the industry fared? In terms of the amount of typefaces created and distributed—the criteria by which copyright, or lack of it, should be judged—it's doing just fine. The number of typefaces in existence, or produced in any given period, is hard to pin down.[110] Partly this is because so many have been created in the twenty years since digitization that the numbers change rapidly; partly it's because the number of typefaces is just really hard to count. A 1974 estimate pegged the number at 3,621.[111] A 1990 estimate is of 44,000 typefaces;[112] a 1996 estimate is of 50,000 to 60,000.[113] A 2002 estimate was of 100,000.[114] Today, the website fonts.com lists 153,839 computer fonts for sale (though, remember, a font can refer to a single size or weight of a typeface family). Some current estimates are as high as a quarter million.[115] If 1974's estimate is credible, and if the current number of 100,000 seems like as good a guess as any other, then there has been a 2,762 percent increase in the last thirty or so years.[116] Hidden in the wide range across time is an important point. Digitization is blamed for making copying designs easier, destroying the incentive to create new typefaces, and yet the net result of it, whatever the absolute numbers, has been that more typefaces have been designed since digitization than in the previous millennium.[117] There may actually be an overabundance of typefaces.[118] As the average consumer can attest, he

---

Mar. 9, 2010). This foundry's license reads: "If you have purchased the font(s) license for use on a large scale campaign such as in the course of entertainment promotion, advertising, corporate identity design . . . in any way that requires the multi media (television, internet, print or other) output of the font(s), an additional license may be required." In fact, licensing issues are one of the primary reasons corporations commission typefaces rather than buy existing ones. CAHALAN, *supra* note 68, at 88.

109. *See*, *e.g.*, Bloody Rip Off Artists, *supra* note 68.

110. CAHALAN, *supra* note 68, at 60–61. Estimates in the 90s ranged widely, from ten thousand to sixty thousand. *Id.*

111. *Id.* at 61.

112. Randall Rothenberg, *Computers Change the Face of Type*, N.Y. TIMES, July 23, 1990, at D1.

113. Caitlin Liu, *Creating a New Generation of Vivid Typefaces*, N.Y. TIMES, Aug. 5, 1996, at D5.

114. CAHALAN, *supra* note 68, at 61.

115. Snyder, *supra* note 82, at 98 n.3.

116. CAHALAN, *supra* note 68, at 61.

117. *See* CHAPPELL & BRINGHURST, *supra* note 62, at 278.

118. *See* HELLER & FILI, *supra* note 100, at 9 (noting there may be more type designs "than will ever be used effectively").

probably rarely uses more than a few of the hundred or so that come pre-installed on his computer. Furthermore, as anybody who has looked has probably discovered, there are tens of thousands of inexpensive and free typefaces available to download, legally.[119] The situation, in short, is ideal for the consumer: typefaces are abundant and cheap.

But are they good? The incentive thesis is not just about the number of expressive works that are produced, it is also about whether an industry invests as fully in their creation and dissemination as they would if they had some legal control over copying.[120] There's no evidence to suggest under-investment. Yes, it's true that there are many poorly made or trivial typefaces, probably more—both absolutely and proportionally—than before. But this is not the result of the industry pulling investments in new designs it would have otherwise made. Instead, it's the result of the digitization, and resulting democratization, of typeface design. Typefaces today can be made much more easily and cheaply than before.[121] Setting up a foundry before digitization required a large investment in both equipment and labor, meaning that only larger, well capitalized companies could enter the market.[122] Now, font editing software, some of it free,[123] and the Internet have made it possible for a single person to run a foundry, even as a part-time business or hobby, from his basement.[124] Today, there are maybe 500 type designers (and maybe 100 foundries) in the world, not counting amateurs and dilettantes.[125] This might not sound like a lot, and it isn't, but in the metal type era there were only twenty, and until digitization there were only about fifty.[126] And, where before a large foundry might release five typefaces a year, now even a small foundry can release hundreds and, because the overhead required to produce a typeface design is so small, with little financial risk.[127] With all these extra designers, amateurs and professionals, and all these extra designs, there's bound to be some poor typefaces.

However, developing a professional typeface today can potentially

---

119. Jessica Bennett, *Just Go to Helvetica*, NEWSWEEK, Apr. 7, 2008, at 54.

120. *See* Jonathan M. Barnett, *Shopping for Gucci on Canal Street: Reflection on Status Consumption, Intellectual Property, and the Incentive Thesis*, 91 VA. L. REV. 1381, 1384 (2005).

121. *See* BLACKWELL, *supra* note 85, at 152.

122. *See* Virginia Postrel, *Playing to Type*, THE ATLANTIC MONTHLY (Jan./Feb. 2008), *available at* http://www.theatlantic.com/doc/200801/fonts ("Having an idea for a typeface used to be like having an idea for a new-model car.").

123. Fontforge is a free, open-source font editor. There are even Internet sites that allow visitors to create, via user-friendly applets that run in web browsers, their own typeface and download the results. *See* FontStruct, http://www.FontStruct.com (last visited Mar. 9, 2010).

124. *See* KINROSS, *supra* note 35, at 168–69.

125. *See* Liu, *supra* note 113.

126. *See id.*

127. LOXLEY, *supra* note 56, at 236. Digitization has also increased the speed by which established designers can churn out type. *See* Snyder, *supra* note 82, at 116 n.93.

take more investment than at any time since type was carved in metal by hand.[128] While digitization has greatly sped up the process of designing typefaces,[129] it has also meant, since the late 1990s development of the OpenType computer font format, that a font file can now contain tens of thousands of characters (65,536 to be precise).[130] Designing all these characters takes an enormous amount of time.[131] Customers come to expect this expanded character set, and also the refinements, like kerning tables,[132] digitization has allowed.

Though digitization has facilitated plagiarism and file-sharing,[133] it has, more importantly, spurred demand[134] and lead to an explosion of typefaces. By comparison, what has Europe bought by granting monopolies to typeface designs?[135] Numbers have proved to be hard to come by. Partly this is because the typeface design industry is relatively small, and partly it's because the typeface industry is a cottage industry, aside from a few big foundries. Considering that the content generating industry in the United States is, depending on how you count, somewhere in the neighborhood of $1 trillion per year,[136] typeface design is truly not even a drop in the bucket.[137] But, one (relatively old) estimate at least places annual worldwide sales of typefaces at $300 million per year, with the United States responsible for half of that.[138] This jibes with another estimate that about half of the world's typeface designers reside

---

128. Adobe's Garamond Premiere Pro, a recently made typeface, took years to create. *See* Garamond Premier Pro, *supra* note 65.

129. BLACKWELL, *supra* note 85, at 138, 173–74; William M. Bulkeley, *Font War: That's My Type*, WALL ST. J., Nov. 19, 1993, at B1 (explaining that letters can be automatically scaled; parts of letters can automatically be reused—"P" in an "R" for instance).

130. KINROSS, *supra* note 35, at 173 n.12.

131. *See* ADOBE, ARNO PRO, http://www.adobe.com/type/browser/pdfs/arno_spec.pdf (2007) (Robert Slimbach describes the process of designing a new typeface for OpenType).

132. *See id.* (comments of Adobe designer Robert Slimbach). Kerning tables hold information about how to kern text. To kern means to make fine adjustments to the default spacing between combinations of certain letters. *See* BAINES & HASLAM, *supra* note 34, at 102.

133. *See* Liu, *supra* note 113.

134. John Hudson, *Unicode, From Text to Type*, *in* LANGUAGE, CULTURE, TYPE: INTERNATIONAL TYPE DESIGN IN THE AGE OF UNICODE 24, 25 (John D. Berry ed., 2002).

135. *See, e.g.*, Law No. 97-283 of March 27, 1997, Journal Officiel de la République de Française, [J.O.][Official Gazette of France], July 1, 1997, p. 8 (France protecting typefaces under copyright law).

136. STEPHEN E. SIWEK, INT'L INTELLECTUAL PROP. ALLIANCE, COPYRIGHT INDUSTRIES IN THE U.S. ECONOMY: THE 2006 REPORT 2 (2006), *available at* http://www.iipa.com/pdf/2006_siwek_full.pdf.

137. Adobe is one of the largest type foundries in the world yet the sale of type makes up less than 5 percent of its revenue. *See* Adobe Sys. Inc., Annual Report (Form 10-K), at 45 (Jan. 24, 2008).

138. Rothenberg, *supra* note 112.

in the United States.[139] Anecdotal evidence, too, seems to at least suggest that the American market is certainly not less vibrant than the European one, and probably more so.[140] While it is hard to conclusively show that the typeface industry in the United States is stronger than Europe's despite (or even because of) the lack of copyright protection, Europe's does not seem to be doing any better, even though it suffers the social loss caused by the grant of a monopoly.[141]

II.   THE MECHANISMS OF INNOVATION

Though cataloging and understanding the list of industries operating in intellectual property law's open areas seems important,[142] only the culinary arts,[143] magic,[144] fashion,[145] stand-up comedy,[146] and databases[147] have been examined to any significant degree.[148] No other industries operating in intellectual property law's open areas have been examined, partly because most kinds of expressive works are copyrightable. But there are still a few uncopyrightable ones left that could be, including perfume, tattoos, furniture design, fireworks displays, hairstyles, sports plays, car bodies, uninhabited architectural structures, and new words and slogans.[149] As this list suggests, deciding what

---

139. CAHALAN, *supra* note 68, at 62.

140. *See generally* HELLER & FINK, *supra* note 101.

141. *Cf.* BOYLE, *supra* note 6, at 207–19 (discussing the analogous fate of databases, which are protected in Europe but not in the United States. The database industry in the United States has greatly expanded while Europe's has stagnated).

142. Raustiala & Sprigman, *supra* note 28, at 1776–77.

143. *See* Emmanuelle Fauchart & Eric von Hippel, *Norms-based Intellectual Property Systems: The Case of French Chefs* (MIT Sloan Sch. of Mgmt., Working Paper 4576-06, 2006).

144. *See* Jacob Loshin, *Secrets Revealed: How Magicians Protect Intellectual Property Without Law*, *in* LAW AND MAGIC: A COLLECTION OF ESSAYS (2008).

145. *See* Barnett, *supra* note 120; Raustiala & Sprigman, *supra* note 28.

146. *See* Dotan Oliar & Christopher Sprigman, *There's No Free Laugh (Anymore): The Emergence of Intellectual Property Norms and the Transformation of Stand-Up Comedy*, 94 VA. L. REV. 1787 (2008).

147. *See* BOYLE, *supra* note 6, at 207–19.

148. In addition, Justice Breyer wrote a famous law review article when he was still a professor in response to the proposed term extensions in the 1976 Copyright Act. Prior to 1891, the U.S. did not recognize copyrights in foreign works. Breyer analyzed why, in the U.S., American editions of English books were inexpensive, American publishers profited from their sale, and why English authors were paid well for their American editions, often better than for their English ones (American publishers paid English authors for his advance sheets to guarantee themselves a significant lead-time advantage over other publishers). *See* Breyer, *supra* note 24, at 299–300; *see also* Plant, *supra* note 12, at 28.

149. *See* Tom Bell, *Indelicate Imbalancing in Copyright and Patent Law*, *in* COPY FIGHTS: THE FUTURE OF INTELLECTUAL PROPERTY IN THE INFORMATION AGE 1, 9 (Adam Thierer & Wayne Crews eds., 2002). The listing here of uninhabited architectural structures is facetious, but it illustrates the absurdity of protecting "inhabited" architectural works, as if there were a shortage of buildings that could only be cured by copyright protection. Uninhabited architectural structures (bridges, for example) are not protected because, like typefaces, they are too functional. *See* Architectural Works Copyright Protection Act, Pub. L.

qualifies as a bona fide open area of intellectual property law can be hard. Some listed here could justifiably receive some kind of treatment; others could not. Typeface designs, on the other hand, justifiably could, which is why the fact they have not been is so notable, and why their omission from even being mentioned as an industry operating in the open areas of intellectual property law is more notable still.

A.   Functionality, Rivalrousness, and Innovation

Typefaces serve a functional purpose. In this respect, they are like fashion, architecture, or cuisine: clothes are needed for warmth, buildings are needed for shelter, food is needed for nourishment, and typefaces are needed for printing words. Consider the first type designers: they were, first and foremost, printers. Gutenberg in the 15th century didn't invent the first typeface for any other reason than that, being the Western world's first printer, there was no other type for him to use. Until the 16th century when a division of labor appeared, separating the job of printer and typeface designer,[150] a printer typically made one typeface, the one used for his shop.[151] This one typeface satisfied his basic, utilitarian needs.[152]

This utility underlies all the mechanisms responsible for today's proliferation of typefaces. As with 16th century printers, modern needs would be adequately satisfied with a handful of typefaces, just as our need for warmth would be satisfied by a few entirely pragmatic articles of clothing. Nobody *needs* to buy more clothes than are necessary to keep them warm. But, as long as at least this is needed, clothes become subject to, for instance, all the social forces that induce fashion cycles. This in turn induces people to buy—and designers to design—clothes that are, strictly speaking, gratuitous. Likewise with typefaces. Instead of the few

---

No. 101-650, 104 Stat. 5133 (1990) (codified as amended at 17 U.S.C. §§ 101-02, 120 (1994)).

150*. See* LAWSON, *supra* note 85, at 386. Printers performed work besides designing and founding that today would be divided amongst editors, publishers, typesetters, and typographers (book designers). *See* BAINES & HASLAM, *supra* note 34, at 74.

151*. See* LOXLEY, *supra* note 56, at 36. If a printer wanted to set up shop, he would have had a problem if he did not already have type—which was expensive, even if he could have persuaded someone to sell theirs. *See id.* at 40–42 (Garamond's punches were only sold after his death). Usually, then, a printer had to make his own. If a printer did not possess or could not hire the unique combination of skills needed to both design and make type, he would have had to hire somebody who could work with metal, and have them at least copy a common design. *See id.*

152. The pure utilitarianism of typefaces in this period meant that they were not conceived of as objects of design, subject to superfluous variations, even if these early typefaces were meticulously composed. Having no conception of a typeface as a design, printers did not even give them names. *See id.* at 36. Instead, the typefaces simply became known by the last name of the printer who made them. Garamond, for instance, is an early 16th century design of Parisian publisher Claude Garamond. *Id.* at 40–42.

that are needed simply for reading, what we actually get are hundreds of thousands. The rest of this paper will analyze the forces, other than copyright, that have morphed the few typefaces that would suffice into a rich abundance.

Though typefaces' functionality may underlie the innovation experienced in the type design industry, there is an important difference between typefaces and other expressive works, like fashion, that are denied copyright protection because of their functionality, yet thrive nonetheless. Because typefaces today primarily exist as computer fonts—and are really only useful to anyone when they do exist as computer fonts—they have much more of the characteristics of a public good than do clothes. Clothes are rivalrous goods, even if their designs are not. But both a typeface's design and its typical embodiment—computer fonts—are non-rivalrous. In this respect, they are more like any other commonly pirated digital media, like music.[153] (Which is probably why, of all the content-generators operating in the open areas of intellectual property law, typeface designers are among the most vocal in calling for copyright protection.)[154] Magic, databases, and stand-up comedy, each an example of an innovative genre of expressive works that are largely denied copyright protection, are also generally non-rivalrous. They are not, however, functional in the way that typeface and clothes are.

Typefaces therefore have no exact analogue among other expressive works in intellectual property law's open areas that have been studied: they are functional, yet they are transmitted via non-rivalrous digital files. Expressive works like clothes that are functional yet rivalrous thrive despite—and sometimes because of—rampant copying, plagiarism, and piracy. As discussed below, typefaces are no exception. Those industries that are non-rivalrous, on the other hand, are innovative not despite copying, but because they can mitigate copying to some extent (mostly via industry norms). Because typeface designs are both functional and non-rivalrous, they proliferate for reasons that allow both functional yet rivalrous expressive works, and non-functional and non-rivalrous expressive works, to proliferate. The advantage of several mechanisms working in collaboration is that no single one has to be especially

---

153. CAHALAN, *supra* note 68, at 37 (explaining that typeface designers often compare the industry to that of music, largely because the file size of a computer font is about the same as a song, and therefore just as amenable to file sharing). Plagiarism in the fashion industry is more-or-less accepted as business-as-usual, even though, with the aid of technology, knock-offs can be produced and in stores almost as soon as the originals. *See* Raustiala & Sprigman, *supra* note 28, at 1714–16.

154. *Compare* Typeright.org, http://www.typeright.org/default.html (Jan. 26, 2007) (website of an industry trade group whose purpose is "to promote typefaces as creative works and to advocate their legal protection as intellectual property"), *with* Raustiala & Sprigman, *supra* note 28, at 1699 (noting that fashion designers generally do not lobby for more protection).

powerful for the mechanisms as a whole to foster sufficient innovation. So, while the rest of this paper will analyze the forces that typefaces' underlying functionality has unleashed, it will do so in this context.

B.   *How Technology Affects Innovation in Typeface Design*

Changes in technology have always influenced typeface designs, even before the advent of moveable type. Typefaces were conceived as a kind of superhuman, idealized handwriting, though one permitting "exact and fast replication."[155] But they were conceived of as a handwriting nonetheless, partly to make the printed word acceptable to a public accustomed to script hands.[156] The German blackletter which Gutenberg imitated for his first typeface design, for instance, had developed in the 13th century as a compact, quickly written script;[157] the roman letters most of Europe would adopt to type soon after Gutenberg began printing originated as script too.[158] Because typeface designs are modeled to some extent on handwriting, the first typeface designs were partly dictated by the pens used to write the scripts on which the first types were based. Later changes in pen technologies therefore spurred the development of new designs.[159] The change from flat-edged brush, then to the broad-nibbed pen, and finally to the quill in the 19th century all caused general changes in handwriting.[160] The changing handwriting had to be reflected, stylized, and regularized in subsequent typefaces.[161]

---

155. BRINGHURST, *supra* note 43, at 18–19. Italics were developed as a closer but less idealized imitation of handwriting. *See* LAWSON, *supra* note 85, at 84–91.

156. *See* LOXLEY, *supra* note 56, at 13 (noting the Gutenberg Bible designed to look as though written, to be acceptable to the public).

157. CHAPPELL & BRINGHURST, *supra* note 62, at 35, 40. Handwriting scripts before the invention of printing were in constant flux. *See* Robert Bringhurst, *Voices, Languages, and Scripts Around the Globe*, *in* LANGUAGE, CULTURE, TYPE: INTERNATIONAL TYPE DESIGN IN THE AGE OF UNICODE 3, 5–6, 9–17 (John D. Berry ed., 2002).

158. LOXLEY, *supra* note 56, at 27. Roman letters' consistent size and width worked well in combination with other letters, especially in comparison to blackletter designs, which is why romans won out over blackletters. *Id.*

159. *See* BRINGHURST, *supra* note 43, at 130. In fact, the technologies of writing implements that pre-date the pen affected typeface designs. The roman letters inscribed on the Trajan column have long served as an aspirational model for majuscule letters. These letters were inscribed with a chisel. CHAPPELL & BRINGHURST, *supra* note 62, at 24–27.

160. *See* CHAPPELL & BRINGHURST, *supra* note 62, at 24–27, 198–99. For instance, Renaissance designs have the characteristics of "letters . . . produced by a broadnib pen held in the right hand in a comfortable and relaxed writing position." BRINGHURST, *supra* note 43, at 123. Beginning in the 18th century, the broadnib pen is replaced by the "pointed and flexible quill." *Id.* at 130. "Used with restraint, it produces a Neoclassical flourish. Used with greater force, it produces a more dramatic and Romantic one." *Id.* The ballpoint pen and felt-tip pen have also been cited as having affected handwriting in the 20th century, though changes in pen usage are no longer reflected in typeface designs. *See* CHAPPELL & BRINGHURST, *supra* note 62, at 276–77.

161. CHAPPELL & BRINGHURST, *supra* note 62, at 198. This is to say nothing of various script typefaces, which imitate an ideal calligraphic penmanship, or of modern digitized

This process continued when technologies changed in the dominant modes of written communication. When in the early 19th century all iron and machine driven printing presses (until then, printing presses were made from wood and hand driven) were invented, the dominant aesthetic of typefaces changed, too, reflecting the technology. Where before the more organic nature of printing presses were faithfully echoed in typefaces that imitated the natural motions of handwriting, iron presses led to typefaces made of more rigid, artificial characters, with great exaggerations between thick and thin letter strokes.[162] And when computers became the dominant mode of writing, some typefaces embodied, even celebrated, the crude, digital aesthetic of early computer technology.[163]

1.   Technology Forces Innovation

The most straightforward place to see the ways in which technology can be responsible for motivating the creation of new typefaces is to look at how typefaces either had to be created to deal with the limitations of a particular technology, printing or otherwise. Type has been made from wood, lead, and electrons; type has been set by hand, phototype, and computer; type has been displayed on paper and screen. Every change in printing, typesetting, or typeface design technologies has required typefaces conforming to their limitations.[164] But the limitations of one technology are not the same as those of another, so designs for one technology do not always translate well, if at all, to the next.[165] So when new technologies arise, new typefaces have to be made. Indeed, as one type critic has noted, "[p]erhaps typefaces in general work best when they have been specifically designed for the medium in which they are used."[166]

The special demands of the newspaper industry have been a particularly rich source of innovation. In fact, the demands of the newspaper industry in the 19th and early 20th century were possibly a greater influence on type design than any other aesthetic influence or

---

versions of a person's handwriting. *See* LAWSON, *supra* note 85, at 354–66.

162. *See* CHAPPELL & BRINGHURST, *supra* note 62, at 193.

163. *See* BAINES & HASLAM, *supra* note 34, at 94. It has long been suggested that typeface designs should be the aesthetic embodiment of the medium they are designed for. *See, e.g.*, LOXLEY, *supra* note 56, at 238–39.

164. *See* John Hudson, *Unicode, From Text to Type*, *in* LANGUAGE, CULTURE, TYPE: INTERNATIONAL TYPE DESIGN IN THE AGE OF UNICODE 24, 25–26 (John D. Berry ed., 2002).

165. *See* HERMAN ZAPF & JOHN DREYFUS, CLASSICAL TYPOGRAPHY IN THE COMPUTER AGE 10–11 (1991).

166. LOXLEY, *supra* note 56, at 238.

technical compromise.[167] Newspapers are the most profitable when they can be printed as quickly as possible on cheap paper.[168] A typeface design has to account for this, and other, contingencies. For instance, high speed printing is susceptible to ink trapping, where ink seeps out of what are supposed to be its bounds, collecting especially in a letter's counters. Typefaces commissioned for newspaper presses often have to compensate for this phenomena by containing notches at the junctions of letter strokes so that when ink is squeezed out it collects in these notches, rather than somewhere else.[169] Another way to compensate for ink-trapping is to design a typeface that has no sharp angles in which ink is likely to be trapped and later smudged, and/or to design typefaces with relatively fat letters.[170] The ubiquitous Times New Roman—commissioned by *The London Times*—was designed with ink trapping in mind. It was also designed to be compact, and readable at small sizes, thus saving on space, which saved on paper, and money.[171] Though many of the problems that had to be designed around in the late 19th and early 20th century were eventually mitigated by advances in printing technologies, some problems will be intractable as long as newspapers are printed on paper.[172] In 2007, *The Wall Street Journal* adopted a design meant to squeeze more text on each page without compromising legibility.[173] In 2001 they commissioned a design for the tiny print of their financial tables. The result was partly influenced by the need "to correct for the blurring that takes place when thin ink hits cheap paper at

---

167. *See* LAWSON, *supra* note 85, at 235. At the same time such design restrictions tooketh away, they also gaveth. The hard metal needed to withstand the rigors of newspaper printing also allowed characters to be composed of finer, more delicate, and sharper lines. *See* Talbot Baines Reed, *Old and New Fashions in Typography*, 77 INLAND PRINTER (1926), *reprinted in* TEXTS ON TYPE: CRITICAL WRITINGS ON TYPOGRAPHY, *supra* note 50, at 6, 14. Text faces meant strictly for book design are not generally subject to the same limitations as those meant for newspapers, and can be designed from more purely aesthetic principles. *See* Gerard Unger, *Legible?*, 23 EMIGRE 6 (1992), *reprinted in* LOOKING CLOSER: CRITICAL WRITINGS ON GRAPHIC DESIGN 108, 113–14 (Michael Bierut et al. eds., Rudy VanderLans trans., 1994).

168. *See* BLACKWELL, *supra* note 85, at 78.

169. *See id.*

170. *See* LOXLEY, *supra* note 56, at 131.

171. *See id.* Commissions of this sort are not restricted to the newspaper industry. Sabon, a popular text typeface, was commissioned by German printers in the 1960s to be 5 percent narrower than the Garamond from which it is was based. *See* VanderLans, *supra* note 92. In fact, the first italic was developed, in the 15th century, to save space and, therefore, money (italics are, among other things, squeezed versions of their roman counterpart). CAHALAN, *supra* note 68, at 14.

172. What happens when ink is pressed into paper has always been a consideration in type design. *See* BLACKWELL, *supra* note 85, at 96 (explaining that machine made paper has different technical requirements than handmade paper); LAWSON, *supra* note 85, at 123 (explaining how low paper quality in post-war Germany led to the creation of Palatino, a widely used typeface).

173. *See* Postrel, *supra* note 122, at 143, 145.

high speed."[174] The *New York Times* commissioned a typeface to compensate for the effects different atmospheric conditions have on printing in the different regions its national edition is printed. The goal, in other words, was to ensure that the newspaper looks the same no matter where it's printed.[175]

Newspapers might not be printed on paper for much longer, but news and most other content will be rendered digitally. Though typefaces have always had to be designed with the demands of technical requirements,[176] digitization has multiplied the factors a designer must consider. For a time, typefaces had to be designed within the confines of early digital technology's severe limitations.[177] For instance, early computer memory (and also printer and screen resolution) was very meager. For this reason, computer fonts could not have curves, but instead had to be built out of block-like units.[178] Though those limitations have been overcome (and in retrospect were very ephemeral) and no longer have to be designed around, there is still one area where only relatively poor resolution is possible: screens.[179] This is why, for instance, most typeface designed specifically for the web are sans seriffed: the resolution of screens does not render the fine details of serifs very well at normal text sizes.[180] Of course, the need for designs that work sensibly on screen is a necessity not just for computers, but for television and cell phones too.[181] There are even digital typeface companies that

---

174. *Id.*

175. *See* Hoefler & Frere-Jones, Mercury Text, http://www.typography.com/fonts/ font_overview.php?productLineID=100017 (last visited Mar. 8, 2010). The typeface developed for the project can also be used to compensate for typeface printed in different mediums. The problem was solved by developing a typeface with different "grades," each used under certain conditions. *Id.* Typeface designs often have a shortcoming when printed on or with a certain medium. *See, e.g.*, LAWSON, *supra* note 85, at 166.

176. *See* BLACKWELL, *supra* note 85, at 96 (describing how high speed presses required different things of a typeface design than hand presses).

177. HELLER & FINK, *supra* note 101, at 5–6.

178. *See* KINROSS, *supra* note 35, at 169 (Lucida, a still prevalent typeface, was designed for low resolution printers). There were other limitations, too. For instance, computer fonts could only include 256 characters. *See* Hudson, *supra* note 164, at 26, 30–31.

179. The resolution of paper is about ten times greater than the resolution of a screen. MILES KIMBALL & ANN HAWKINS, DOCUMENT DESIGN: A GUIDE FOR TECHNICAL COMMUNICATORS 78 (2008).

180. *See* LOXLEY, *supra* note 56, at 238.

181. *See* Elizabeth Woyke, *Android's Very Own Font*, FORBES.COM (Sept. 26, 2008), http://www.forbes.com/2008/09/25/font-android-g1-tech-wire-cx_ew_0926font.html (describing the two year process to create a typeface family for the smart phone built to run Google's Android mobile operating system); Press Release, Monotype Imaging, Monotype Imaging Announces Fonts for Verizon Wireless Mobile User Interfaces (Jan. 15, 2008), http://ir.monotypeimaging.com/releasedetail.cfm?ReleaseID=298042 (announcing that Monotype created a new typeface family for Verizon, meant to optimize legibility on a small screen at both large and small sizes).

specialize in creating digital fonts for digital hardware.[182]

Design constraints and quirks are not only a product of digitization: they have been common to every major change in printing technology. The development of typesetting machines at the end of the 19th century was the first real change in the technology of setting text since the invention of type. Though these machines made it cheaper and faster to set text, they had their own quirks, each with their own set of design restrictions.[183] For example, the Linotype machine could not kern letter combinations. Typefaces made for this machine had to account for this deficiency by, for instance, being designed with relatively large letter-spacing.[184] Phototype, the other significant typesetting technology (besides digitization) to have emerged, had its own quirks that had to be designed around, and designed for, as well.[185] For one, it required typefaces that were more solid than their counterpart in another medium. Otherwise, the typeface would look spindly when printed.[186] When machine text setting overlapped with phototypesetting (which it did for about 30 years between the advent of phototype and digitization), typefaces were often released in two versions, a "metal" version, and a phototype version.[187]

2.   At the Same Time, Technology Makes Innovation Possible

Of course, new technologies don't just impose limitations; they also open up new possibilities. For instance, refinements in printing and paper technology in the 18th century meant that less pressure had to be applied to type. More delicate designs, including hairline serifs, were possible.[188] These possibilities were eventually embodied in new designs, and indeed a whole new aesthetic.[189] And while typesetting machines had certain limitations that had to be designed for, many typefaces, especially historical revivals, would not have been made in the first place if not for

---

182. *See* Woyke, *supra* note 181.

183. *See* LAWSON, *supra* note 85, at 155–56 (noting that when typefaces designed for machine typesetting are translated into digital type, the restrictions are lifted).

184. *See* LOXLEY, *supra* note 56, at 201, 204–05.

185. *See* BRINGHURST, *supra* note 43, at 139. The change from machine typesetting to phototypesetting required the *The London Times* to replace Times New Roman with Times Europa, a typeface designed for the latter method of typesetting. LAWSON, *supra* note 85, at 276.

186. LAWSON, *supra* note 85, at 143. More than anything, this is because "letters designed to be printed in three dimensions [that is, pressed onto the printed page] look weaker when printed in two [electrochemically transferred to paper]." BRINGHURST, *supra* note 43, at 139.

187. BLACKWELL, *supra* note 85, at 104.

188. CAHALAN, *supra* note 68, at 15.

189. *Id.*

their invention.[190] It may be true that creating proprietary historical revivals, or any typeface for that matter, was only a means to sell more machines,[191] but innovation often has crass roots. Typefaces are hardly ever designed for purely aesthetic reasons; design is inseparable from technology and commerce.[192] Whatever the motivation, typesetting machines were the first typesetting technology since printing began to be the spur for new typefaces.[193] Similarly, phototypesetting created its own rush of new designs, beginning especially in the 1970s.[194] For one, phototype allowed for narrower (even overlapping) letter spacing and shorter descenders (the tail of a "y" for instance) while still retaining legibility.[195] Typefaces were inevitably designed accordingly; indeed, for a time in the 1970s, much advertising copy exhibited the faddish aesthetic made possible by phototype.[196]

The digitization of typeface design and typesetting is the first technology to undoubtedly be responsible for more designs because of the possibilities it opens than the limitations it imposes. I have mentioned the democratization of the type design industry that made it possible for more people to design more type, but digitization has had other curious affects. The smaller foundries that digitization permits tend to be run by designers. They are not just less risk-averse than the professional managers that usually run large, established foundries, they are also closer to newer design theory taught in universities and design schools, and closer to the avant-garde design community.[197] Combine this with the low cost of digital distribution—where typefaces which it would not have been economical to release in the past (a prototype version or an experiment, for instance) now can be[198]—and these foundries are much more naturally inclined to be innovative. Digitization

---

190. *See* BAINES & HASLAM, *supra* note 34, at 58.

191. *See* BLACKWELL, *supra* note 85, at 26 (noting that typesetting machines required proprietary typefaces).

192. *See* KINROSS, *supra* note 35, at 171.

193. CHAPPELL & BRINGHURST, *supra* note 62, at 249 (Monotype and Linotype commissioned new designs, and revivals, for their machines to satisfy the market). The Monotype typesetting machine allowed, in one typeface, romans to be combined with italics. This was a benefit of the machine designers created new typefaces to take advantage of. BRINGHURST, *supra* note 43, at 140. Other, more niche, artisan technologies, like copperplate engraving, lithography, and wood type, also allowed new designs that had previously been impossible, or at least impractical. Tobias Frere-Jones, *Experiments in Type Design*, AIGA BOSTON J. (1999), *reprinted in* TEXTS ON TYPE: CRITICAL WRITINGS ON TYPOGRAPHY, *supra* note 50, at 228, 230.

194. BRINGHURST, *supra* note 43, at 139–40.

195. LOXLEY, *supra* note 56, at 201–06.

196. *See* David Berlow, *So You Want to Create Your Own Typeface?*, FOLIO, Jan. 1990, at 74, *available at* http://findarticles.com/p/articles/mi_m3065/is_n1_v19/ai_8226607.

197. *See* VanderLans, *supra* note 92.

198. *See* Frere-Jones, *supra* note 193.

has also meant that for the first time in history typeface designers are completely liberated from any concern for designing within the confines of proprietary typesetting systems like the Monotype and Linotype machines or, rather, from the concerns of the manufacturers of these systems, for whom they often worked.[199] Designers now create typefaces at their whim, free from both the practical constraints of proprietary systems, and the kinds of business calculations and conservative professionalism they engender.[200]

But the democratization of the industry and its ancillary effects are not the only consequences of digitization that leads to more typeface designs. For one, computers have raised the awareness of typefaces in ordinary consumers—who had previously been somewhat oblivious to typefaces[201]—increasing the demand among them.[202] For another, just as revivals were made for typesetting machines and then phototype systems, digital revivals are also made; often these are revivals of typefaces already revived for either machine or phototype text setting.[203] But even re-revivals are not slavish copies of a previous revival. Often, because of the limitations of prior technologies, digitization provides the first chance to faithfully reproduce a historic design.[204] Furthermore, digitized versions of a metal type or phototype version do not have to account for the printing systems for which the originals were designed. For instance, Claude Garamond's original punches on which Adobe based their definitive digitized Garamond are cut thinner than the results of printing from Claude Garamond's punches would suggest.[205] Garamond cut his type thinner than it appears on paper to account for the amount ink

---

199. *See generally* King, *supra* note 96. This occurred around 1988, when both Postscript, a page description language, and Fontographer, a typeface design program, were available. These allowed the creation and use of any computer font with any combination of personal computer and output device.

200. *See id.*

201. Peter Wayner, *Down With Helvetica: Design Your Own Font*, N.Y. TIMES, June 26, 2008, at C6, *available at* http://www.nytimes.com/2008/06/26/technology/personaltech/26basics.html.

202. *See* Berlow, *supra* note 196, at 75–76.

203. *See* BRINGHURST, *supra* note 43, at 140 (noting how most revivals have passed through the "stylistic filters" of machine type and phototype being cut before digitization); CHAPPELL & BRINGHURST, *supra* note 62, at 57–58 (providing the example of Janson, a widely used text typeface, which was originally made in the 17th century, adapted for the Linotype machine in 1954, and digitized 40 years after that).

204. HELLER & FILI, *supra* note 100, at 185. Historical typefaces, especially as they might appear as printed, can have many irregularities endemic to the design itself, or the result of "uneven casting, bad inking, and rough press work." Reed, *supra* note 167, at 9. A digitized version can choose to keep these irregularities for effect or, as is more often the case, contemporize and normalize them. *See* Karrie Jacobs, *An Existential Guide to Type*, METROPOLIS (1988), *reprinted in* TEXTS ON TYPE: CRITICAL WRITINGS ON TYPOGRAPHY, *supra* note 50, at 21, 23–24.

205. Kelly, *supra* note 63, at 56–58.

spreads when it is pressed by type.[206] A serious revival has to consider that modern printing methods do not press type into paper in the same way as 16th century printing methods. If it does not, slavish copies can end up being poor imitations.[207] Because they are not slavish copies, they count as new expressive works.

Despite the oft lamented denigration of type design standards attributed to the digitization of the design process, digitization has lead to new technological tools that can, and do, increase the quality of typefaces. When these tools were new, no existing typefaces employed them. Typefaces therefore have to be created when consumers demand that which they know is possible.[208] OpenType, for instance, is a cross-platform font file format developed by Adobe and Microsoft. The first OpenType computer fonts were released around 2001. Perhaps the most important feature of the OpenType format is that it can contain, in one package, a character set large enough to encompass the whole range of characters and symbols, in any language, a typographer or graphic designer needs when setting text.[209] These characters include the usual majuscule and miniscule roman letters and numbers, but also, for instance, Cyrillic and Greek alphabets; true small caps, superscripts, fractions, and subscripts; ligatures, old style numerals, alternative swashes, accented letters, punctuation, and symbols.[210] Moreover, each alphabet may come in as many as five optical sizes, each of those coming in at least italic and bold weights, and often several others (light, semi-bold, etc.). This, and other typographic refinements OpenType makes possible,[211] means that new typefaces have to be created to satisfy market

---

206. *Id*. An interesting question this raises is what is the true typeface, the one embodied in physical type, or the printed result? *See* Frere-Jones, *supra* note 193, at 230–31.

207. *See* CAHALAN, *supra* note 68, at 37.

208. *See* John D. Berry, *United States of America*, *in* ASSOCIATION TYPOGRAPHIQUE INTERNATIONALE REPORTS OF THE COUNTRY DELEGATES 2000-2001, at 35 (2001) (suggesting OpenType "promises a revolution, or at least a speeded-up revolution, in mass typography").

209. ADOBE, OPENTYPE USER GUIDE FOR ADOBE FONTS 2–3 (2008), http://www.adobe.com/type/browser/pdfs/OTGuide.pdf; KINROSS, *supra* note 35, at 172. The predominant font file format before OpenType limited character sets to 256. If a user needed to access more "expert" characters, he needed to have more than one computer font of the typeface family installed, and juggle between them.

210. Small caps are often "faked" by shrinking a regular majuscule letter. This, however, results in a small capital that is not in proportion. Ligatures are two or more letters combined into one. "f" followed by "i" are commonly formed into a ligature, since the dot of the "i" will form an unsightly overlap because it is too close to or overlaps with the end of the "f." *See generally* ADOBE, TYPOGRAPHY PRIMER (2000), https://www.adobe.com/education/pdf/type_primer.pdf.

211. *See* ADOBE, *supra* note 209, at 2 (mentioning, cryptically, that OpenType fonts "may include . . . layout features to provide richer linguistic support and/or advanced typographic control"); Berry, *supra* note 208 (mentioning the "typographic refinements" made possible by OpenType).

demand for advanced typographic features.

Among the "world of possibilities" opened up for typeface designers, consider the optical sizes mentioned above.[212] In the 16th century, when type was made by hand, a type founder obviously had to physically make type for each font size he wished to have on hand. As long as he had to make new type for every size, he may as well make type that compensates for the effects of shrinking (which can make a typeface look too thin) or enlarging (which can make a typeface look to thick) type beyond a certain point. With the advent of machine typesetting (where the machine casts lines of type from single-sized masters) and phototypesetting, the practice of making different optical sizes ceased because there was no practical way to use them when typesetting. Though it could have been revived by digitization, it was not feasible to do so before the development of OpenType. For one, computer font file formats could not contain, in a single file, all the characters necessary to have more than one optical size. Since it's very easy to just let software enlarge or shrink a computer font to get a desired font size, there was not sufficient incentive to work around the barrier a limited character set imposed. With that barrier gone, however, typeface designers can, mostly with the aid of interpolation (where font editors can automatically make a character thicker or thinner, for instance), create typefaces with multiple optical sizes. When they can, customers come to expect the "more balanced and easy to read" result, increasing the demand for new typefaces with optical sizes included in their character set,[213] not to mention the generally higher standards now possible.[214]

Technology, then, has been one of the factors that has given the typeface design industry incentives to create new typefaces, even without copyright protection. When new technologies constrain typefaces, and if no typefaces exist within those constraints, new ones have to be created. Otherwise, there would be no typefaces for the emergent typesetting system or medium. Technology also makes new typefaces possible. The market demands—and more importantly pays for—new designs, without the need for any copyright incentive to spur innovation.

C.   Industry Norms

Technology and its consequences, not to mention some of the mechanisms discussed below, allow typefaces to proliferate despite plagiarism of designs, or piracy of computer fonts. Norms within the industry, however, work to mitigate plagiarism among it, helping to

---

212. ADOBE, *supra* note 131, at 5 (comments of Robert Slimbach, Adobe type designer).
213. *Id.* at 11–12 (comments of Robert Slimbach).
214. *See id.* at 4–5 (comments of Robert Slimbach).

offset the theoretical loss of incentive the industry has to create new designs.

1.   General Theories of Norms Applicable to Typeface Design

A good definition of a norm is that it is a "rule governing an individual's behavior that is diffusely enforced by . . . social sanctions."[215] Although the field of norms is large and unsettled,[216] and although norms will never be able to wholly replace laws, intellectual property or otherwise, in every, or even most, instances,[217] there are some generalizations widely agreed on in the field that are broadly applicable to this topic.

The first generalization is on the emergence of norms. Norms emerge for intuitive reasons. The need for norms arise when behavior has good or bad consequences on other people[218] and when legal sanctions are not available, or when transaction costs for enforcing legal sanctions are too high, or are too little understood, to be expedient.[219] Norms will emerge from this need when a group has some goal and they believe a norm can help them attain that goal.[220] Norms will be successful and will perpetuate as long as the benefits to the group are high and the costs to enforce the norm are low.[221]

The next generalization is that there has to be some way to monitor whether others in a group are violating norms, and there has to be at least some members of a group willing to serve as monitors. Monitoring serves two purposes. Most obviously, it lets those who enforce norms know when to enforce them and who to enforce them against. But it also serves as a way for a group or a member of a group to determine the level of compliance with the governing norms.[222] People largely cooperate conditionally: they will only comply with governing norms when they are assured that other members of the group are also complying (not free-

---

215. Robert C. Ellickson, *The Evolution of Social Norms: A Perspective From the Legal Academy*, *in* SOCIAL NORMS 35, 35 (Michael Hechter & Karl-Dieter Opp eds., 2001).

216. Michael Hechter & Karl-Dieter Opp, *Introduction* to SOCIAL NORMS xi, xii (Michael Hechter & Karl-Dieter Opp eds., 2001); *see* Ernst Fehr and Urs Fischbacher, *Social Norms and Human Cooperation*, 8 TRENDS IN COGNITIVE SCI. 185, 185, 189 (2004) (noting that the existence of norms "is one of the big unsolved problems" in social science).

217. *See* Fauchart & von Hippel, *supra* note 143, at 27.

218. *See* Fehr & Fischbacher, *supra* note 216, at 185.

219. Robert C. Ellickson, *Of Coase and Cattle: Dispute Resolution Among Neighbors in Shasta County*, 38 STAN. L. REV. 623, 686 (1986).

220. Karl-Dieter Opp, *Social Networks and the Emergence of Protest Norms*, *in* SOCIAL NORMS 234, 236 (Michael Hechter & Karl-Dieter Opp eds., 2001).

221. *Id.* at 236–38; *see* Smith, *supra* note 26, at 406–07.

222. Mark F. Schultz, *Fear and Norms and Rock & Roll: What Jambands Can Teach Us About Persuading People to Obey Copyright Law*, 21 BERKELEY TECH. L.J. 651, 704–05 (2006).

riding, in other words) at a level above a certain threshold.[223] Monitoring, and communication among a group about the results of monitoring,[224] serves to alert members of a group about whether they should continue to observe the group's norms. This fact largely explains what might otherwise be a paradox. If I can rely on other members of my group to monitor and sanction transgressors, why shouldn't I free-ride on somebody else's monitoring? Because my interest is not merely in punishment, but in determining whether it is rational (that is, I don't want to be a sucker) for me to continue to adhere to the group's norms.[225] The paradox can also be explained by the prestige monitors are also granted when they catch cheaters.[226] This prestige offsets the "costs" of monitoring.

As its definition reveals, the existence and efficacy of norms depends on a group's ability to sanction violators.[227] Fortunately, in the context of public goods, free-riding in violation of prevailing norms tends to elicit strong reactions. To the extent that free-riders are discovered, they are likely to also be punished, even if sanctioning is costly.[228] Sanctioning can take several forms, but it generally serves to either lessen a violator's future opportunities in the group or to take away whatever benefit was gained by a violator's attempt to free-ride. The latter is self-explanatory, but an example might be destroying a farmer's crops if he has been caught appropriating more water than his share. The former can be accomplished via negative gossip (irrespective of whether the gossip is true or untrue) that signals to other members of a group that a violator is not someone with whom to conduct transactions.[229] It can also be accomplished by inflicting psychic harm so that the violator retracts from opportunities the group would have afforded him.[230] Of course, a group can banish a violator outright.[231] Sanctioning can also serve to assure members of a group that free-riders will not have an advantage over adherents to the group's norms and, therefore, that adhering to the

---

223. Dah M. Kahan, *The Logic of Reciprocity: Trust, Collective Action, and Law*, 102 MICH. L. REV. 71, 71 (2003).

224. *See* Lars Udéhn, *Twenty-five Years with* The Logic of Collective Action, 36 ACTA SOCIOLOGICA 239, 254 (1993).

225. *See* OSTROM, *supra* note 25, at 95–97.

226. *See id.* at 96.

227. *See* Fehr & Fischbacher, *supra* note 216, at 187 (sanctioning increases levels of cooperation in running community resource properties).

228. *See id.* at 189.

229. *See* ERIC POSNER, LAW AND SOCIAL NORMS 19–27 (2000).

230. *See* Richard H. McAdams, *A Focal Point Theory of Expressive Law*, 86 VA. L. REV. 1649, 1650–51 (2000).

231. *See* Greif et al., *Coordination, Commitment, and Enforcement —The Case of the Merchant Guild*, 102 J. POL. ECON. 745, 745–76 (1994) (providing the example of merchants refusing to trade with any merchant who has cheated another).

norms is not foolish.[232]

The last generalization is that norms work best among smaller groups.[233] The reasons for this, too, are largely intuitive. For one, the logistics of monitoring and enforcement are simplified and cheaper.[234] For another, smaller groups are closer-knit, so its members are more likely to have "credible and reciprocal prospects" to sanction other members and to have better information on them and all their actions.[235] Because of personal ties in the group, that information "circulates easily."[236] In other words, it is harder to get away with anything when everyone knows everyone else's business.[237] Personal ties also make monitoring and enforcement more efficient, effective, and likely,[238] and make sanctions that exploit the desire for prestige and of others' esteem more effective.[239] I would further suggest that the Internet has given groups that otherwise would not have the characteristics of small, close-knit groups the ability to operate as if they had, especially when what's being monitored are public goods disseminated over the Internet or whose dissemination can be discovered over the Internet. The Internet simplifies and cheapens the logistics of monitoring and enforcement.[240] It makes the threat of an omniscient group—which is essentially what a small group is, or purports to be—more credible.[241] Information no longer has to be remembered or transmitted by members with a special status or knowledge;[242] transgressions are there for all members of a group to see. The Internet also enables a group to enforce its norms among its members without them having to live close to each other to

---

232. *See generally* Fehr & Fischbacher, *supra* note 216.

233. *See*, *e.g.*, Opp, *supra* note 220, at 240.

234. *See* Christine Horne, *Sociological Perspectives on the Emergence of Social Norms*, *in* SOCIAL NORMS 3, 20 (Michael Hechter & Karl-Dieter Opp eds., 2001) (noting the ability of a group to organize itself is important in the enforcement of norms).

235. ROBERT C. ELLICKSON, ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES 181 (1991).

236. *Id.* at 178–79.

237. *Cf.* Lior Jacob Strahilevitz, *Reputation Nation: Law in an Era of Ubiquitous Personal Information*, 102 NW. U. L. REV. 1667 (2008) (examining how networking technologies allow for the spread of reputation-related personal information, and its effects).

238. *See* Mark Granovetter, *Threshold Models of Collective Behavior*, 83 AM. J. OF SOC. 1360, 1420–43 (1978).

239. *See* OLSON, *supra* note 4, at 60–65; *see generally* Richard H. McAdams, *Cooperation and Conflict: The Economics of Group Status Production and Race Discrimination*, 108 HARV. L. REV. 1003 (1995).

240. *See* OSTROM, *supra* note 25, at 95–96 (noting that one feature of community resource properties is that they can be successfully monitored at very little cost: monitoring is a by-product of using the commons); *see also* Schultz, *supra* note 222, at 717 (providing an example where monitoring occurs by moderators on e-mail lists and discussion boards, and by website administrators). Enforcement by banishment, via blocked IP addresses for instance, is also trivial.

241. *See* ELLICKSON, *supra* note 235, at 180–81.

242. *See id.* at 232–33.

maintain the personal ties that are so important for effective enforcement.[243]

2.   Industry Norms in Other Open Areas of IP Law

Magic, the culinary arts, and stand-up comedy—industries operating in intellectual property law's open areas[244]—effectively use norms and sanctioning mechanisms as would be predicted by the general theory of norms described in the section above,[245] though each in a unique way that addresses each industries' peculiarities, to mitigate the copying and, in the case of magic tricks or jokes, unwanted exposure of their expressive works.[246] At the same time, however, these norms are designed to foster innovation by permitting, within certain bounds, the use of old works in creating new ones.[247] As a result, these industries thrive.[248]

Governments have mostly ignored the ways in which norms help to manage the problems of public goods when governments intervene in managing them, whether those public goods come in the form of expressive works like magic, cuisine, or stand-up comedy, or whether they come as common-pool resources (CPR), like shared water supplies or grazing lands.[249] Tailoring a copyright regime according to the incentive needed to create a sufficient number of new works seems like a morass. But industries that can successfully mitigate intra-industry copying might be the most likely candidate to at least consider tailoring. In the first place, industries that currently *do* use norms to manage their expressive works should not then have formal rules imposed on them. Formal rules might destroy successfully operating norms-based

---

243. *See* OLSON, *supra* note 4, at 52–62.

244. *See, e.g.*, Lambing v. Godiva Chocolatier, No. 97-5697, 1998 U.S. App. LEXIS 1983 (6th Cir. Feb. 6, 1998) (declaring recipes uncopyrightable).

245. Christopher J. Buccafusco, *On the Legal Consequences of Sauces: Should Thomas Keller's Recipes Be Per Se Copyrightable?*, 24 CARDOZO ARTS & ENT. L.J. 1121, 1154–55 (2007) (describing sanctioning mechanisms among chefs); Loshin, *supra* note 144, at 32 (describing sanctioning mechanisms in magic); Oliar & Sprigman, *supra* note 146, at 1815–21 (describing sanctioning mechanisms in stand-up comedy).

246. *See* Loshin, *supra* note 144, at 13, 18. In this regard, magic tricks and jokes are not great examples of a public good. A trick or joke, being just information, is certainly non-excludable, but it is rivalrous. When a magic trick is exposed, its value is destroyed. *See* id.

247. *Id.* at 8 ("[I]nnovation in magic . . . is often cumulative."); *see* Buccafusco, *supra* note 245, at 1150–55 (stating that the goals of norms among chefs are to credit innovators, punish plagiarists, and perpetuate a culture of sharing which allows new recipes to be created from old ones).

248. *See, e.g.*, Buccafusco, *supra* note 245, at 1150 (noting the culinary arts are innovative without intellectual property protection); Oliar & Sprigman, *supra* note 146, at 1793 (norms are able to provide comedians with enough incentive to create new material).

249. *See* OSTROM, *supra* note 25, at 21–22. Common pool resources are non-excludable, but are rivalrous. *Id.* at 24.

regimes.[250] Formal rules could also discourage norms that would otherwise have organically developed, without government intervention.[251] When considering how to handle industries that could use norms to mitigate copying, the first thing to do, obviously, is to create a theoretical model that can identify those industries that would be amenable to being managed through norms and, likewise, those that would not.[252] This requires empirical evidence on how industries operate without intellectual property, not theoretical models derived from theoretical predictions.[253]

Acknowledging and studying the roles that norms can play—rather than mechanisms that naked economic models would predict—in managing intellectual property is important. Some work has been done on how norms successfully manage CPRs without external government control or by divvying public goods into private property,[254] as Hardin's *The Tragedy of the Commons* predicts is necessary to prevent the overuse and free-riding supposedly endemic to CPRs.[255] Landes and Posner list mechanisms besides intellectual property laws whose result would be to offer authors enough incentive to create new expressive works.[256] But Landes and Posner are ultimately dismissive of the importance of these mechanisms, claiming that strong intellectual property laws are still needed to correct other market deficiencies or quirks that would occur without them.[257] But what if their list is not complete? One shortcoming of Law and Economics theory is that, as Robert Ellickson points out in *Order Without Law*, it is diametrically opposed to Law and Society theory and therefore somewhat naturally adverse or blind to mechanisms Law

---

250. Oliar & Sprigman, *supra* note 146, at 1849 (recognizing that externally imposed rules might be seen as illegitimate). Ideally, formal legal rules would complement norms for efficiency's sake, rather than working sometimes at odds with them. *See* Stephan Panther, *Non-Legal Sanctions*, *in* 1 ENCYCLOPEDIA OF LAW AND ECON. 999, 1017–20 (Bouckaert & De Geest eds., 2000) (summarizing some work in this area).

251. *See* Anthony Scott & James Johnson, *Property Rights: Developing the Characteristics of Interests in Natural Resources*, *in* PROGRESS IN NATURAL RESOURCE ECONOMICS: ESSAYS IN RESOURCE ANALYSIS 376, 377 (Anthony Scott ed., 1985).

252. *Cf.* OSTROM, *supra* note 25, at 24–25, 183 (calling for theoretical models that would predict when a CPR could be managed without government intervention or divvying them up into private property).

253. *Cf. id.* at 24–25 (noting the same in the context of CPRs); *id.* at 14 ("institutional arrangements do not work in the field as they do in abstract models"). Ostrom identifies basic design principles inherent to all successful, long-enduring CPRS, postulating that most of these would have to be present in any other CPR that wishes to be successful. *Id.* at 88–91.

254. *See id.* at 58–101 (giving several examples of successful, long-enduring CPRs).

255. *See generally* Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243 (1968).

256. They include such things as the first-mover advantage, imperfect copies, licensing, technological barriers, and low costs of creation and distribution. *See* LANDES & POSNER, *supra* note 2, at 41–50. A non-exhaustive list could further include price discrimination and advertising. *See* Carrier, *supra* note 10, at 36–37.

257. *See* LANDES & POSNER, *supra* note 2, at 50–51.

and Society theory might predict that would also limit copying.[258] One such mechanism, of course, is social or industry norms. By not acknowledging the roles that norms can play Landes and Posner have not considered whether norms would correct the market deficiencies they believe still make strong and uniform intellectual property laws necessary. Without empirical evidence on norms, the Law and Economics theoretical model by itself would temper any ideas about tailoring.

3.   Norms in the Type Design Industry

There are two basic norms in the type design industry. One is against verbatim copies, as one might predict. However, outside of file-sharing or digitally made clones, exact copies of typeface designs are actually relatively uncommon, even among knockoffs, though the differences from the original can be trivial. For example, Arial, Microsoft's version of Helvetica, is not exactly the same as the original, though most people don't notice the difference.[259] Consider, too, the practice of making revivals of historical designs, which began in the late 19th and early 20th century when the manufacturers of composition machines needed designs for text type, and continues today.[260] Reviving historical designs—mostly those created between the 15th and 17th centuries[261]—is generally considered acceptable. It's a good thing, too. Revivals are the key theme of modern typography,[262] and borrowing elements from existing designs has always been an important and accepted part of typeface design.[263] Examples abound: Times New Roman is a revival of a 16th century typeface;[264] almost everyone offers some version of Garamond, an early 16th century design;[265] and so on.[266]

---

258. ELLICKSON, *supra* note 235, at 6–8, 137; *see* Udéhn, *supra* note 224, at 251–53 (noting there may be reasons people do not free-ride on public goods that economic analysis or game theory cannot predict).

259. *See Arial versus Helvetica*, I LOVE TYPOGRAPHY, Oct. 6, 2007, http://ilovetypography.com/2007/10/06/arial-versus-helvetica/. Examples abound. *See*, *e.g.*, Bloody Rip Off Artists, *supra* note 68 (commenting that Adobe's Myriad is very slightly different from Frutiger).

260. LAWSON, *supra* note 85, at 54–55, 74.

261. *See generally id.*

262. *See* BLACKWELL, *supra* note 85, at 36.

263. *See*, *e.g.*, VanderLans, *supra* note 92.

264. BLACKWELL, *supra* note 85, at 76–78.

265. *See* LOXLEY, *supra* note 56, at 40–42. Complicating matters is the fact that many versions are based on designs mistakenly attributed to Garamond, though they were actually by his associates, or are even based on prior re-creations of designs mistakenly attributed to Garamond. *See* LAWSON, *supra* note 85, at 129–40, 147–50, 151–52, 158. Only a few are faithful re-creations of the original, and many reflect more the era and region in which they were made than the original itself. BLACKWELL, *supra* note 85, at 39.

266. *See*, *e.g.*, CHAPPELL & BRINGHURST, *supra* note 62, at 232 (noting that Centaur and Doves roman, two designs of the handcraft press movement still used today, are based on 16th

But what constitutes an acceptable historical revival, and an unacceptable copy? One designer has published an eight-level classification system for determining how much "inspiration" was taken from an historical design, and whether the result is acceptable.[267] In the classification scheme, knockoffs are the only classifications that do not rate as a proper revival; they seek to capitalize on commercial success and have no added originality, and therefore violate the norm against verbatim copying.[268] But what might otherwise be a knockoff is acceptable when it has been well-researched, and improves, either "technically, aesthetically, [or] functionally," the original.[269]

When it comes to contemporary designs, this schema holds, but requires, for legitimacy, that when one design borrows from another that it either includes its own original elements, alters the borrowed elements creatively, or combines borrowed elements in an original way.[270] Because designs are rarely verbatim copies, and because it is acceptable to copy from even contemporary designs as long as certain conditions are met, a second norm developed: one against plagiarism where, as the word suggests, the offense is not in using someone else's ideas, but in not crediting them. Here, the norm against verbatim copying of course holds, but it also adds to it that any borrowed elements in a design be credited.[271] As much as anything, this norm is the result of both the impossibility of creating wholly un-derivative designs, and the market reality that typefaces that are only subtly different might actually satisfy different demands.[272]

Norms extend not just to independent designers, but to graphic designers, who form the biggest market for typeface designs, as well.[273]

---

century designs); LAWSON, *supra* note 85, at 262 (revivals of art nouveau designs); LOXLEY, *supra* note 56, at 36–37 (digital re-creations of historical designs).

267. *See* Downer, *supra* note 94 (explaining that the classification system is divided into two categories: one covering designs that "closely follow the original," and one for designs that "loosely follow the original").

268. *See* LESLIE CABARGA, LOGO, FONT, AND LETTERING BIBLE: A COMPREHENSIVE GUIDE TO THE DESIGN, CONSTRUCTION AND USAGE OF ALPHABETS AND SYMBOLS 38 (2004) (noting the norm against verbatim copying).

269. Posting of billtroop to Typophile, Get Those Fonts Copyrighted!, http://typophile.com/node/50470 (Oct. 15, 2008, 04:53) [hereinafter billtroop].

270. *See* CABARGA, *supra* note 268; VanderLans, *supra* note 92 (describing the practice of digital "sampling," wherein a sampled font "is a hybrid" made up of distinctive parts copied directly from existing digital fonts.").

271. *See* VanderLans, *supra* note 92; billtroop, *supra* note 269 (noting that Font Bureau, a foundry that mostly licenses computer fonts from independent designers, produces "numberless superb knock-offs," which is acceptable because "each one is impeccably researched and executed, and *each one is impeccably sourced*").

272. *See* Posting of SuperUltraFabulous to Typophile, Bloody Rip Off Artists!, http://typophile.com/node/36209 (Aug. 17, 2007, 02:40).

273. *See* Posting of Mark Simonson to Typophile, The High Price of Piracy, http://typophile.com/node/15647 (Oct. 17, 2005, 11:56) (noting that consumers typically do

Among the graphic design community, it's common to download pirated computer fonts as a way to "sample" them (in effect building up a library from which to choose).[274] Sometimes these sampled computer fonts are even shown to a client as part of a design proposal, or as a choice among designs.[275] If, however, that computer font is ever used for a commercial job, the graphic designer will buy a version of the computer font he has sampled.[276] Pirated computer fonts will not be used, or so the norm goes.[277]

The generalized theory of norms described above predicts that independent typeface designers should have some success in reducing copying and plagiarism among other independent designers. As noted, the industry is relatively small. Since computer fonts are released on the Internet, the designs are easy to monitor for copying or plagiarism and, to the extent that designers are geographically dispersed, the Internet facilitates monitoring and enforcement. This is not to suggest that there hasn't always been monitoring. It's just that the same force—the Internet—has both created the independent designer and the means by which he can enforce the norms of other designers. Not only that, but the Internet creates permanent record of transgressions,[278] so that no monitor has to be charged with the responsibility of keeping tabs, when sanctioning is warranted, of who has been adhering to norms and who has not. The memory is built into the system.

The modern business model in the industry is, in part, a result of technologies that facilitated the copying of designs. When phototype first made copying easier, the industry reorganized itself so that the large foundries became more like agencies—accepting and distributing designs from independent designers—than foundries employing a salaried design staff.[279] When foundries operated under the old model, monitoring for

---

not buy computer fonts; graphic designers do).

274. *See* Posting of bert_vanderveen to Typophile, Piracy in the Design Community, http://typophile.com/node/16177 (Nov. 13, 2005, 12:09).

275. *See* Posting of Termopolium to Typophile, Font Piracy and the Internet, http://typophile.com/node/27711 (Aug. 17, 2006, 04:54).

276. *See* Discussion thread of Fontleech, Weekend Discussion Question 6: Piracy, http://fontleech.com/04/29/2005/weekend-discussion-questions-6-piracy (Apr. 29, 2005, 14:02).

277. *See id.*

278. *See* Posting of raph to Typophile, Bloody Rip Off Artists!, http://typophile.com/node/36209 (Aug. 16, 2007, 21:27) [hereinafter raph].

279. *See* BLACKWELL, *supra* note 85, at 126. The designer of Helvetica, perhaps the most successful design in history, was paid a wage, receiving no royalties. LOXLEY, *supra* note 56, at 174; King, *supra* note 96 ("Adobe is the only company that continues to offer full-time, waged employment to designers of original typefaces.") This source may be a little dated on this point. It appears that Hoefler & Frere-Jones employs typeface designers. *See* Hoefler & Frere-Jones, Biographies, http://www.typography.com/about/biographies.php (last visited Mar. 7, 2010).

violations of norms was hard, and enforcing norms even harder. Consider, for instance, a dispute among large foundries in the mid to late 1920s, where one foundry accused the other of copying many of its designs. The dispute was very public and nasty, with competing articles in trade journals, letters back and forth among company executives, and lots of rebukes and threats.[280] Yet not a single design was retracted by the accused. This may have partly been because there was no easy way for the design community as a whole to compare the designs of the two firms; partly it may have been because, even if the designs were blatant copies, the accused just had too much invested to give in. The companies in this era that made type primarily to use in the lucrative typesetting machines they manufactured would have been even less likely to retract plagiarized designs in response to any attempt at sanctioning by, for instance, shaming.

The model begun in the era of phototype has continued in the age of the Internet, where online foundries typically license computer fonts from independent designers to customers. The onus to monitor for plagiarism now falls largely on the designer, not the foundry. The decentralization of monitoring in this manner might seem unfair and unwieldy, but with so many computer fonts available from so many sources, it's impossible for a few entities to successfully monitor the industry as a whole. A foundry cannot even monitor whether the computer fonts it licenses are knockoffs or not.[281] The collective of individual designers, however, can. They monitor websites and alert their colleagues when they spot illegal copies of their typefaces.[282] Furthermore, enforcing norms is far easier against actual people than it is against a company. And to the extent that sanctions are directed to companies, they are more likely to comply since they have invested little, if anything, in the designs that they license out. Compare the attempt to enforce an industry norm in the 1920s mentioned above with the process today. Trawling Internet discussion forums is a good way to see monitoring and enforcement of industry norms in action. Examples of possibly plagiarized designs are ferreted out;[283] accusations of plagiarism are typically aired and analyzed, usually by third-party, objective observers.[284] Norms can be enforced in a variety of ways. The mildest enforcement is hardly distinct from monitoring: contacting the foundry

---

280. *See* Pankow, *supra* note 99, at 239–55.

281. *See* Posting of segura to Typophile, Bloody Rip Off Artists!, http://typophile.com/node/36209 (Aug. 17, 2007, 09:00).

282. CAHALAN, *supra* note 68, at 93.

283. *See, e.g.,* Posting of Bald Condensed to Typophile, FontShop and Unnamed Firm Reach Agreement, http://typophile.com/node/17362 (Jan. 17, 2006, 15:12).

284. *See, e.g.,* Bloody Rip Off Artists, *supra* note 68.

to alert them to a knockoff they are licensing.[285] Sanctioning can escalate to shaming,[286] threats of a boycott,[287] or refusals to work with or license to foundries with a reputation for selling copied or plagiarized designs.[288] These sanctions can ultimately result in a vendor removing a computer font he is licensing[289] even though there is no legal reason for him to do so.[290] The "democratization" of type design might mean that there are more designers who operate outside the usual orbit of the design community, and who are therefore less susceptible to the coercive effect of norms.[291] But, when the ultimate sanction for a norm-violating design is to have it delisted from the only place it can generate much revenues (that is, an online brokerage), the norms don't necessarily have to work against each independent designer to be effective.

There is another characteristic of the type design industry that makes it amenable to norms. I noted above that one of the few accepted universals in the field of norms is that norms tend to work better among smaller groups. This is an intuitive principle. I would add a corollary to it: Norms also work well in tournament professions. A tournament profession[292] is one "in which participants vie for large awards that only a small fraction will eventually obtain."[293] In other words, you trade a low wage for a small chance at a much higher one. The great majority of participants (or aspiring participants) make no or very little money, while a very few are made wealthy by it. Most show business professions are examples of tournament professions.[294] A great example is that of

---

285. *See, e.g.*, Posting of Miss Tiffany to Typophile, Bloody Rip Off Artists!, http://typophile.com/node/36209 (Aug. 16, 2007, 20:27). Typeface owners also alert Internet Service Providers to websites hosting pirated computer fonts, citing the DMCA. CAHALAN, *supra* note 68, at 93.

286. *See* Posting of dicharry to Typophile, Bloody Rip Off Artists!, http://typophile.com/node/36209 (Aug. 17, 2007, 20:39).

287. *See* BLACKWELL, *supra* note 85, at 126.

288. raph, *supra* note 278.

289. It's interesting to note that foundries, like Adobe, who still employ salaried designers, are the most resistant to acknowledging plagiarism. *See* Bloody Rip Off Artists, *supra* note 68.

290. *See, e.g., id.*

291. *See* Lipton, *supra* note 32, at 168–69 (making essentially this argument).

292. Tournament professions are also called superstar professions. *See* Sherwin Rosen, *The Economics of Superstars*, 71 THE AM. ECON. REV. 845, 845 (1981). "Superstar" has a slightly different connotation and denotation, I think. It's usually written about in the context of the market-changing effect of technology, where a few of the most talented performers, because of broadcastings, recordings, etc., are able to satisfy market demand. *Id.* at 847; *see also* LANDES & POSNER, *supra* note 2, at 49–50 (explaining the superstar phenomenon).

293. Steven D. Levitt & Sudhir Alladi Venkatesh, *An Economic Analysis of Drug–Selling Gang's Finances*, 115 THE Q.J. OF ECON. 755, 773 (2000) (describing street gangs who deal drugs, where perhaps 1 in 200 dealers might make anything resembling a good living, most of the rest make less than minimum wage, and where the chance of arrest, injury, or death are greater than one).

294. Rosen, *supra* note 292, at 845

classical musician.[295] The top few concert pianists in the world are probably constantly booked and handsomely paid. The Juliard-trained fiftieth-best concert pianist (imagine being the fiftieth best in the world at something), by contrast, probably has to supplement his income in between stints, if he is lucky enough to get them, with the Wichita Symphony Orchestra. The industries discussed above that limit copying successfully through norms are essentially tournament professions. Stand-up comedy is a tournament profession.[296] Yes, Jerry Seinfeld is rich enough to buy a garage for his Porsches in the middle of Manhattan, but most comedians toil in obscurity on the comedy circuit. Magicians too: Davids Copperfield and Blaine are rich, and a few guys in Vegas probably are too, but mostly it's a profession of amateurs working birthday parties. Ditto for chefs, though the average chef can probably always make a decent living.[297]

It's arguable that typeface design is a tournament professional since nobody is made rich by it.[298] Of the only about 500 type-designers in the world,[299] a few certainly make a good living,[300] and a few more are able to make a living exclusively through type design.[301] The rest either have to supplement their income with other work, or they make almost no money at all.[302] Thus it seems to have always been.[303] The salient fact, though, isn't necessarily that the rewards are so high, but that the rewards are pretty good (you might get to make a living doing what you love), while the chance of actually achieving that reward is pretty small. Typeface as a tournament profession has all the characteristics of a group where norms should, in theory, operate well. Namely, it's small and interconnected. The fact that it also has some similarity to tournament professions means that the effects of industry norms, to the extent that they exist, are magnified. Because the industry is structured like a quasi-tournament profession, anybody on the outside of success might be reluctant to violate industry norms lest they miss whatever slim chance

---

295. *Id.*

296. *Id.*

297. Though there are only a handful of Michelin four-star restaurants in the world.

298. Liu, *supra* note 113.

299. *See id.*

300. *See* Alice Rawsthorn, *About Typeface*, N.Y. TIMES, Feb. 26, 2006, § 6 (Women's Fashion Magazine), at 176 (describing how type design has as its "king," Matthew Carter, and its "crown princes," Christian Schwarz, Frere-Jones, and Jonathan Hoefler).

301. *See* LAWSON, *supra* note 85, at 381 (noting that a few designers make a living employed by a type foundry).

302. *See* BLACKWELL, *supra* note 85, at 13. Also, most of a foundry's revenue comes from a small number of designs, mostly those with extensive possibilities for licensing or corporate use. *Id.* at 154. Even a successful or award-winning design may only sell a hundred or so licenses per year. *See* Rob Walker, *Type Casting*, N.Y. TIMES, July 17, 2005, § 6 (Magazine), at 20.

303. LOXLEY, *supra* note 56, at 41, 43–54, 64, 70.

they ever had at success, such as it is.

4.   Plagiarism and the Excludability of Typeface Designs

Norms, of course, don't always work. They are less effective among large foundries or other entities that may need a typeface of a certain design but who do not want to pay licensing fees for it, or among designers who are unscrupulous or are not well integrated within the typeface design community and who distribute their designs themselves. But plagiarizing (as distinct from duplicating the computer font file) a typeface—or creating a close derivative version—either by sight or by scanning a printed version of the typeface into a font editing program, does not always yield a perfect substitute design. This has always been the case. It's easy to see how having to copy a design by forging new metal type might result in flawed copies,[304] but even in the age of phototype, which was the first technology that could feasibly copy designs, renditions were often poor.[305] Digitization has improved attempted copies, but the results of even scanned designs are not always perfect, and may be quite inferior.[306] In any case, even if scanned characters end up exactly like the original, there is more to plagiarizing typefaces than mechanically copying the letterforms.

How much this matters depends on the typeface. For a typeface meant for text typefaces it matters quite a bit.[307] A typical computer font file, especially one meant for professional typesetting, contains data other than that which describes the characters themselves. There are, for instance, kerning tables. To reproduce something approaching a perfect substitute for the original, a plagiarist would have to create this data from scratch. Creating a kerning table for just a single weight of a typeface can take ten hours of work.[308] For a typeface that is to serve only as display text, it matters less. Kerning tables, if they exist for the design, are less important. First, because of how they are used, display text has more room for "slop" in its spacing and kerning.[309] Second, since a graphic designer might adjust the space between letters by hand to get a desired

---

304. *See* Pankow, *supra* note 99, at 237–49. Pankow describes the early history of ATF, a foundry formed as a conglomeration of other smaller foundries in the early 20th century. ATF was widely known to have plagiarized designs, especially European ones, which at the time could only have been accomplished freehand or with the aid of a pantograph. Even with mechanical aid, the originals were not well reproduced.

305. *See* LAWSON, *supra* note 85, at 126–27.

306. *See* Karrie Jacobs, *An Existential Guide to Type*, METROPOLIS (1988), *reprinted in* TEXTS ON TYPE: CRITICAL WRITINGS ON TYPOGRAPHY 21, 23 (Steven Heller & Philip B. Meggs eds., 2001) (comments of Herman Zapf).

307. *Cf.* Barnett, *supra* note 120, at 1382–83 (noting that in fashion, poorly made counterfeit goods do not result in lost sales because they are not a perfect substitute).

308. CAHALAN, *supra* note 68, at 87.

309. *Id.* at 68.

effect, a kerning table is less important. Unlike for a text typeface, adjusting the kerning or spacing for display faces is a feasible proposition since it will typically be used for smaller amounts of text. There is also the enormous character set a professional level typeface should contain.[310] Now, because OpenType allows all these characters to exist in one package, OpenType typefaces are more likely to actually contain them. The amount of time it would take to reproduce all this begins to approach the time it took to create the original in the first place, or at least a large enough chunk of it that copying this way yields diminishing returns,[311] especially when the original designer will enjoy a significant lead-time advantage in sales.[312] The typefaces, then, that take the longest to develop and require the most investment are therefore the most resistant to plagiarism.[313]

The excludability phenomenon in typeface design has analogies in intellectual property law's other open areas. When expressive works do not receive strong copyright protection, and when they are generally non-rivalrous and non-excludable, authors add features or services that are more rivalrous or excludable—or emphasize those parts of expressive content that are already more rivalrous or excludable—to mitigate their works' amenability to copying. The success of the United States' database industry, paradoxically, is perhaps attributable to the lack of copyright protection the industry receives. Because the facts themselves cannot be protected, the industry has had to compete among itself by adding features and tied services to bare facts. This makes the database more valuable than just the sum of its information.[314] Most importantly, these features cannot be copied along with the database itself. Likewise, magicians put more stock in their "act" as a whole and in the originality of their presentation than in the secrets behind their tricks.[315] Comedians have developed a style of stand-up that de-emphasizes the traditional

---

310. *See id.* at 32.

311. *See* Posting of Mark Simonson, *supra* note 104 (suggesting it is not possible to make a decent copy of a design in 20 hours of work); *see also* Plant, *supra* note 12, at 171 (suggesting that copyright is unnecessary when the cost to copy — his example being of a medieval scribe laboriously copying an illuminated manuscript—is high, and also noting that copying in this manner was prone to introducing errors).

312. *See* Nadel, *supra* note 72, at 822.

313. Display typefaces sometimes contain fewer characters. Even if they do not, the entire character set might not be needed (in a logo designed for UPS, for instance, only three letters are needed), so that an incomplete character set might be acceptable. *See* Posting of Bald Condensed to Typophile, FontShop and Unnamed Firm Reach Agreement, http://typophile.com/node/17362 (Jan. 17, 2006, 15:12) (where the new UPS logo contains what seems to be an exact copy of another popular typeface).

314. BOYLE, *supra* note 6, at 215–16 (describing how the hyperlinks to citations West provides in cases and law review articles provide ways to search through databases, summaries of cases, etc.).

315. *See* Loshin, *supra* note 144, at 13, 30.

joke with a punch-line of vaudeville but instead derives much of its humor from the more difficult to copy persona of the comedian.[316] And when one patronizes a high-end restaurant, it's not necessarily to eat a particular dish, but to be cooked for by a famous chef.[317]

Unlike an unscrupulous typeface designer, a typical consumer is not going to be scanning text and manipulating the resulting font files regardless of whether the typeface has excludable elements or not. This requires special knowledge he does not have. He might, of course, look for pirated versions. What's important in this case is the consumer's "cost" to copy, not just in dollars, but in the time it takes, the trouble involved, and whatever guilt might be associated with the act (a guilt partly induced by violating social norms).[318] For an unscrupulous designer, these costs might be more acceptable since he is ultimately looking to profit from his plagiarism. But a consumer does not have as much incentive. It might be "cheaper" to buy a computer font he likes or needs than to locate a copy in cyberspace.[319] The analogy here, in terms of the public goodedness of typefaces, should not be to music files, but to movies. With relative ease, almost any album, which retails for around $15, can be found and quickly downloaded. Movies, on the other hand, take more work. They can be harder to find, especially if they are not a new release, their file size makes them unwieldy, and, unlike compressed digital music files, the inferior quality of compressed movies is glaringly obvious. When a monthly membership to Netflix begins at $8, allowing you to rent about ten movies (depending on how fast movies are watched and returned), the "cost" to download pirated versions quickly exceeds the cost at which legitimate copies can be procured.[320]

Norms within typeface design reasonably substitute for copyright

316. *See* Oliar & Sprigman, *supra* note 146, at 1841–59.

317. *See* Posting of Christopher Buccafusco to The University of Chicago Law School Faculty Blog, The Negative Space of Copyright, http://uchicagolaw.typepad.com/faculty/2006/11/the_negative_sp.html (Nov. 16, 2006, 10:03).

318. *See* Ariel Katz, *A Network Effects Perspective On Software Piracy,* 55 U. TORONTO L.J. 155, 160–61 (2005) (detailing all the "costs" of piracy, both economic and otherwise); *see also* Jon Elster, *Rationality and Emotions*, 106 ECON. J. 1386, 1386–97 (1996) (commenting that internal norms are closely tied to emotions, including regret, remorse, shame, guilt, and embarrassment)*; see generally* Harold Demsetz, *Towards a Theory of Property Rights*, 57 THE AM. ECON. REV. 347 (1967) (stating that norms, after all, are the internalization of external effects).

319. *See* Posting of sii to Typophile, Font Piracy and the Internet, http://typophile.com/node/27711 (Aug. 17, 2006, 12:29) (a graphic designer recounting instances of a colleague spending hours searching for a specific computer font, and noting that the time he spent, translated into an equivalent dollar amount, surpasses what a license to the computer fonts he was looking for would have cost).

320. *See* BOYLE, *supra* note 6, at 102 ("Cheap and easily acquired goods of certified quality compete very well with free goods of uncertain quality whose acquisition involves some difficulty."). *Cf. id.* at 103 (making a similar point about movies, but in the context of the trouble involved decrypting and synchronizing encrypted video files).

laws within the industry. Because of the nature of the industry, norms successfully lessen the amount of plagiarism that might occur. Even where norms do not operate strongly to constrain designers, typefaces, particularly those that require the most investment to make, resist plagiarism.

D.   *Aesthetic Movements and Fashion Cycles*

In a sense, the history of type design is about the search for the perfect form. The problem though, is that the perfect form, if it could be known, invariably changes.[321] Art has always transformed with movements and epochs: Renaissance to Romanticism; Romanticism to Modernism; Modernism to Postmodernism. Typography is no different except that its inherent functionality means that new typefaces must be made when tastes change in a way that new paintings or literature, for example, do not. Most expressive works, as an end to themselves, get made regardless of the changes in artistic modes; typography, as a means to another end, gets created because of it. Since we need at least some typefaces as long as we read, just as we need clothes as long as we do not want to be naked, new ones will be created to accord with the current dominant aesthetic.[322] As one critic has said, "[i]t is the nature of type design to follow the baggage train."[323] And so it has. Typefaces have been Renaissance, Baroque, and Neoclassical.[324] Among the differences between typefaces made in these traditions is the slant of the axis of their letters. Renaissance typefaces have an axis that slants as if written by hand; Neoclassical typefaces have a vertical axis; Baroque typefaces have a mixture of the two.[325] Renaissance humanism is reflected in the humanist slant of the axis;[326] Neoclassical rationalism—inorganic, "static and restrained[,] . . . and far more interested in rigorous consistency"[327] — is

---

321. *See* Bringhurst, *supra* note 157, at 9–10.

322. *See*, *e.g.*, FRIEDRICH FRIEDL ET AL., TYPOGRAPHY 48–49 (1998). Constructivism was an aesthetic movement associated with Soviet propaganda, especially posters, in the 1920s. No suitable typefaces existed that matched the aesthetic, so Soviet type designers had to make many of their own. *See also* BRINGHURST, *supra* note 43, at 119–36 (describing how typeface designs evolve to match the corresponding era).

323. Hudson, *supra* note 164, at 25.

324. *See* BRINGHURST, *supra* note 43, at 121–29.

325. CHAPPELL & BRINGHURST, *supra* note 62, at 158–61.

326. The biggest revolution in type aesthetics was the transition, beginning late in the 15th century, from Gutenberg's German blackletter (whose use finally ended after its associations with Nazism, *see* LOXLEY, *supra* note 56, at 140–41, 153–55) to the roman letters we know today. CHAPPELL & BRINGHURST, *supra* note 62, at 26. This change is synonymous with the ideas of the Renaissance, perhaps the earliest "instance of a style of lettering having a cultural significance." *Id.* at 27. Returns to Renaissance humanism began at the end of the 19th century, largely as a response to alienating industrialization. *See id.* at 19–20.

327. BRINGHURST, *supra* note 43, at 128.

embodied in its unwaveringly vertical axis;[328] the Baroque-ian mixture is indicative of that style, "rich with activity [taking] delight in the restless and dramatic play of contradictory forms."[329] Typefaces have been Mannerist and Romantic, where the emphasis is on dramatic contrasts.[330] Beginning in the late 19th century, typefaces have been designed in the Victorian, Arts and Crafts, and Art Nouveau modes; they have become generally Modern, in its early, late, and commercial forms, or in one of Modernism's subdivisions: Expressionism, Dada, Futurism, Constructivism, De Stijl, Art Deco, Bauhaus, and Swiss Style; more recently, they have become PostModern: Psychedelic, Pop Art, Punk, New Functionalism, New Wave, Grunge; they have even been deconstructed.[331]

From the artistic movements listed above, at least one thing is apparent: the speed at which the movements appear greatly accelerates towards the latter half of the 19th century. There are a lot of causes to this, but there is an important prerequisite. Typeface design had, at some point, to unmoor itself from the calligraphic tradition that had been the main influence on typeface design through the 16th century.[332] Without that, typefaces would only have been designed within a narrow range that more or less mimicked handwriting, and innovations in design would have only occurred with changes in pen technology, and handwriting.[333] Beginning in the 16th century, letterforms were not primarily thought of as a "sequence of manual pen strokes, but as a conceptual idea bound to no particular technology."[334] Instead they would be the products of geometry.[335] Those vertical axes of the 18th century, for instance, are "artificial," completely departing from how strokes would appear if written by hand. But it was not until the advent of the pantograph in the

---

328. Baskerville, a British typeface popular in America in the 18th century, is said to look like American Federal architecture. *See id.*

329. *Id.* at 127.

330. *Id.* at 130. Anybody still not convinced that a typeface can have cultural significance beyond utilitarian function should consider this: the Modernist, Swiss Style Helvetica, is one of the "bleakest souvenirs of the Industrial Revolution," design embracing and representative of the industrial age. Richard Sine, *Type Minds*, METRO, Aug. 8–14, 1996, http://www.metroactive.com/papers/metro/08.08.96/cover/fonts1-9632.html (quoting Robert Bringhurst). Clarendon, a Victorian design, reflects "the hearty, stolid, bland, unstoppable aspects of the British Empire." *Id.* (quoting Robert Bringhurst).

331. *See* HELLER & FILI, *supra* note 100, at 167 (listing some of these general movements); FRIEDL, *supra* note 322, at 18–59 (giving examples of some of the types designed in these styles).

332. *See* Miller & Lupton, *supra* note 93, at 22.

333. *See* CAHALAN, *supra* note 68, at 11 (early designers spent their entire lives designing letters within a narrow, almost indistinguishable, range).

334. Miller & Lupton, *supra* note 93, at 21; *see* CAHALAN, *supra* note 68, at 19–20.

335. CAHALAN, *supra* note 68, at 14. Humanist typefaces would reassert themselves in the 20th century.

19th century, however, that more deviant designs appeared.[336] Because the pantograph aided in creating different sizes and weights of type, letterforms were seen as more flexible, unhinged from the process of manufacturing type. Now artists could design type, not tradesmen.[337] Once written script no longer served as the one immutable reference point, and once digital technology allowed characters to then be taken to their logical limit, typeface designs opened themselves up to being influenced by, not just aesthetic movements, but smaller-scale changes of taste and other cultural factors.[338]

1.   The Susceptibility of Display Faces to Fashion Cycles

The end result of the process culminating in the pantograph was the 19th century's invention of display typefaces. Display typefaces are not suitable for long, continuous text.[339] Rather, they are meant for setting short amounts of text—like headlines, captions, ad copy, or signs— meant to gain a reader's attention.[340] Often, though not always, they are sans-seriffed.[341] Though unmooring typeface designs from script hands and the manufacturing process is a prerequisite for typefaces to be susceptible to fashion cycles, unmooring an entire category of typefaces— display typefaces—from issues of readability made them far more susceptible to it. Think of, say, how a Neoclassical typeface embodies an epoch by only subtle variations over the previous one: rationalist vertical axes, for instance, differentiate a Neoclassical typeface from a humanist, Renaissance one. If there had only been text typefaces, their designs constrained as they are by readability considerations, the industry would have seen far less innovation. Indeed, today there are far fewer text typefaces than display.[342] But display typefaces are not likewise

---

336. Miller & Lupton, *supra* note 93, at 22. Remember, the pantograph allowed typeface designs to be carved into type from enlarged drawings.

337. CAHALAN, *supra* note 68, at 29–30.

338. An example of cultural factors that can influence design is how industrialization, by the mid 20th century, gave us not just Helvetica, but similar types in other languages, all with the aesthetics of heavy industry and centralized production. Bringhurst, *supra* note 157, at 9. Later in the century, type designs would become lighter, reflecting a world, among other things, of greater automation and fast, light transport. *Id.* One aspect of selecting a typeface is, in fact, to place content in a specific historical or cultural context. Michael Rock, *Typefaces Are Rich With the Gesture and Spirit of Their Own Era*, I.D., May-June 1992, *reprinted in* LOOKING CLOSER: CRITICAL WRITINGS ON GRAPHIC DESIGN 122, 122–23 (Michael Bierut et al. eds., 1994).

339. CHAPPELL & BRINGHURST, *supra* note 62, at 283.

340. *See* LOXLEY, *supra* note 56, at 64–65. The dichotomy suggested here between display and text faces is not, in fact, entirely strict. Some text typefaces are used for display, especially when they contain weights specifically designed for that purpose.

341. The discovery of the Rosetta stone and other Egyptian artifacts in the 19th century led to the creation of the first sans-seriffed typefaces. *Id.* at 37–39.

342. *See* RUARI MCLEAN, HOW TYPOGRAPHY HAPPENS 33 (2000) (referencing Daniel

constrained. They can therefore more closely mirror a contemporary aesthetic, and not just large-scale movements, like the Renaissance, usually identified after the fact, but also smaller-scale and often self-consciously created ones.[343] For example, whereas the differences between Renaissance and Neoclassical typefaces are subtle (anybody who does not know what to look for would have a hard time detecting any systematic difference), the differences between a high-Modernist, Swiss typeface like Helvetica and a Postmodern Grunge typeface are vast, and obvious. Because they more closely mirror current taste, they fall out of style faster, with the decline of whatever small-scale aesthetic movement that may have created them or tapped-into zeitgeist responsible for their popularity.[344] This is especially true when a typeface is designed, as it often is, to specifically look contemporary[345] or to have certain cultural connotations, or be associated with "periods of time, significant events, locations, industries, or countries."[346] Its ephemerality is guaranteed.

The typeface industry is often compared to the fashion industry.[347] Indeed, it has many of its hallmarks.[348] First, fashion generally cannot be protected by copyright law because, as with typefaces, it's too functional.[349] And yet the whole enormous global fashion industry is not just innovative, it's "vibrant."[350] There is also the obvious comparison

---

Updike, a late 19th century American printer and typographer who wrote "[o]ur composing-room has . . . only about seven series of standard types for book work"). *Cf.* HELLER & FILI, *supra* note 100, at 10 (display type is especially influenced by fashion trends).

343. *See* HELLER & FILI, *supra* note 100, at 10–11.

344. *See* CAHALAN, *supra* note 68, at 77–83 (proposing that Template Gothic, a typeface popular in the late 1990s, was successful by somehow tapping into the culture's zeitgeist).

345. *Id.* at 73.

346. *Id.* at 74.

347. *See id.* at 112 (relaying comments of a typeface designer who believes the industry has made itself like the fashion industry to foster sales); HELLER & FILI, *supra* note 100, at 107 ("[T]ypography, like style, works in cycles . . . .").

348. *See* YIANNIS GABRIEL & TIM LANG, THE UNMANAGEABLE CONSUMER: CONTEMPORARY CONSUMPTION AND ITS FRAGMENTATION 99 (1995) (including in those hallmarks "[u]niversal appeal, seeming inevitability, . . . a cottage industry of media pundits and image-makers sustaining it and a stream of celebrities embodying it").

349. Raustiala & Sprigman, *supra* note 28, at 1699, 1749; *see* Galiano v. Harrah's Operating Co., 416 F.3d 411, 422 (5th Cir. 2005). Trade dress protection (trademark-like protection for product packaging) is not available for similar reasons. *See* Wal-Mart Stores, Inc. v. Samara Bros., Inc., 529 U.S. 205, 216 (2000). Protection via design patents has not proved feasible either. *See* Raustiala & Sprigman, *supra* note 28, at 1704–05. Fashion does use trademarks to protect its brands and their logos. *See id.* at 1699–72. However, even to the extent that fashion receives any intellectual property protection, enforcement is low. Barnett, *supra* note 120, at 1381–82.

350. Raustiala & Sprigman, *supra* note 28, at 1689; *see id.* at 1775. Part of this innovation can be attributed to the fact that the industry has resisted oligopolies, the result, perhaps, of a lack of copyright protection. *See* Aram Sinnreich & Marissa Gluck, *Music & Fashion: The Balancing Act Between Creativity and Control*, THE NORMAN LEAR CENTER 25 (Conference: Ready to Share, Fashion and the Ownership of Creativity, USC Annenberg School for Communication), Jan. 29, 2005.

that, like fashion, typefaces have to be designed within the constraints of utility. Shirts, whatever they have, need a whole for the head; typefaces, whatever they look like, have to be legible. But chief among the less obvious differences is that typefaces fall in, and especially out, of style.[351] It should be a truism to anybody living in the Western world that successful fashion designs and current styles are copied or imitated, generally moving down from haute couture finally to be dumped out the end of Old Navy.[352] Because typefaces are a design product, they are subject to the same influences as other design products. Namely, consumers become "bored with what they are accustomed to seeing, and vaguely crave something different."[353] They are, in other words, subject to fashion-like cycles.[354] While this is true to some extent for text typefaces—which change along with wholesale aesthetic changes—it is especially true for display typefaces. Many are so closely and consciously designed as an example of, or at least a commodification of, the current faddish aesthetic that their non-ironic usefulness is destined to be short-lived.[355] Obviously, if styles become obsolete, new ones have to be created to take their place.[356]

Like in the fashion industry, piracy, plagiarism, and mimicry accelerate design cycles, speeding the rate at which designs become obsolete, and thereby creating demand for new ones.[357] In the fashion industry, the process works like this: widespread copying of a design or fashion trend cues consumers into what's in style so that they not only know what to buy, but also know when tastes have shifted.[358] As trends trickle down-market, or are imperfectly copied or pirated, the elites who set trends or status-seekers who wish to emulate them move on to a new one so that they are not identified with the class of down-market,

---

351. *See* SEÁN JENNET, THE MAKING OF BOOKS 246 (5th ed. 1973) (printer and typographers "tir[e] of their pets[, their] catalogues . . . strewn with the dead corpses of types that flourished exotically for a day and then drooped and were forgotten"); LOXLEY, *supra* note 56, at 4 (noting that one font vendor has "seen quite a few vogues for different styles over the last few years"); Steven Heller, *The Time Machine*, Print 124 (1991), *reprinted in* LOOKING CLOSER: CRITICAL WRITINGS ON GRAPHIC DESIGN 34, 35–36 (Michael Bierut et al. eds., 1994) (providing examples of typefaces coming back in style).

352. *See* Raustiala & Sprigman, *supra* note 28, at 1695, 1720.

353. LOXLEY, *supra* note 56, at 3; *see id.* at 222.

354. *See* BLACKWELL, *supra* note 85, at 100 (citing two surveys, one from the 1920s, the other from the 1950s, charting the change in popularity of certain typefaces).

355. *See* HELLER & FINK, *supra* note 101, at 8.

356. *See* LAWSON, *supra* note 85, at 224, 354 (noting forgotten types of the 19th century).

357. *See* Barnett, *supra* note 120, at 1384–86 (arguing that counterfeit goods are usually imperfect and help by tarnishing a design's image and speeding up its obsolescence. Unauthorized counterfeiting means that a fashion house does not have to try to accelerate the design cycle itself by establishing low-rent lines that would ultimately undermine the brand). "We let others copy us. And when they do, we drop it." Raustiala & Sprigman, *supra* note 28, at 1722 (quoting Miucci Prada).

358. Raustiala & Sprigman, *supra* note 28, at 1728–29.

"aspirational" consumers.[359] Designers then have to create new designs for the status-setters. And the cycle repeats: the mainstream market moves on to the elite's newly adopted style. "The fashion cycle, in sum, is propelled by piracy."[360] Of course, the key to this process is an ugly kind of Veblenian Theory-of-the-Leisure-Class[361] snobbishness where clothes are a signal of status, ostensibly declaring a consumer's social position and taste.[362] It's important not to take the comparisons of typeface to fashion too far. Clothes convey the wearer's status; typefaces do not, especially considering that most of them cost about the same, and that many are given away free.

Yet, if a typeface is popular enough, plagiarisms or variants will inevitably be created to take advantage of the original's popularity.[363] When a design is spread directly by file-sharing or indirectly or imperfectly by plagiarism it becomes ubiquitous faster than it otherwise would. The result is that some typefaces might have a "shelf life [only] as long as a piece of clothing."[364] And when a new aesthetic enters a market, its general hallmarks are copied.[365] Because of digitization, designs in the new mode can be made and distributed quickly.[366] Ubiquitous typefaces and styles lose their power, either because they have lost their novelty, have lost the ability to convey what they were originally designed to connote, or they become unfashionable.[367]

It might, at first, seem strange that a typeface design can become obsolete, but examples abound: Think of Victorian era typefaces, the kind that might be used on a prototypical wild-west "Wanted" poster, in the yellow journalism of the era, or in its ads.[368] Such designs would only be used today ironically. Famed designer Frederic Goudy began to fail because his typefaces began to look increasingly dated.[369] Cheltenham became a very popular advertising typeface in the early 20th century, and then became very unpopular.[370] In the 1970s and 80s, ITC, a major

---

359. *Id.* at 1721–23, 1733; Barnett, *supra* note 120, at 1384–85, 1391, 1409.

360. Raustiala & Sprigman, *supra* note 28, at 1726.

361. *See generally* THORSTON VEBLEN, THE THEORY OF THE LEISURE CLASS (Prometheus Books 1998) (1899).

362. *See* JULIET SCHOR, THE OVERSPENT AMERICAN: UPSCALING, DOWNSHIFTING, AND THE NEW CONSUMER 34–39 (1998).

363. *See* LAWSON, *supra* note 85, at 256–61 (explaining that about 50 variants of Cheltenham, a popular typeface for advertising in the early 20th century, were made by various foundries).

364. CAHALAN, *supra* note 68, at 172.

365. *See* Bloody Rip Off Artists, *supra* note 68.

366. *Cf.* Raustiala & Sprigman, *supra* note 28, at 1714–16 (with the aid of technology, knock-off fashions can be produced and in stores almost as soon as the originals).

367. *See* CAHALAN, *supra* note 68, at 146.

368. *See* LAWSON, *supra* note 85, at 354.

369. LOXLEY, *supra* note 56, at 100–01.

370. LAWSON, *supra* note 85, at 253–61. Cheltenham was originally designed as text

foundry, had a "penchant for letters of liberal proportions, tightly packed horizontally," a style that's passé now.[371] For a time, sans-seriffed typefaces were considered to be the only acceptable typeface, if one wished to be contemporary.[372] Helvetica falls in and out of style, its meaning changing with context: it has been a revolutionary avant-garde design embodying the ideals of Modernism, and it has been thought fascistic, commodified by capitalism and corporatism.[373] Souvenir, a typeface popular in the 1970s, looks laughably dated today.[374] The typeface Template Gothic is acutely associated with mid 1990s graphic design.[375] In fact, typeface designers have cited the point that typefaces follow trends and fashions as the biggest reason for a typeface's popularity at any given moment.[376]

2. The Role of Advertising

If fashion-like cycles are the engine for innovation, advertising is the rest of the car, including the driver. The demand for typefaces for advertising coincided with the industrial revolution and its commercial vigor.[377] After 1820, most typefounders made most of their money selling display typefaces destined for advertising[378] instead of text typefaces destined for books, and by 1890 the demand for new typefaces outstripped supply.[379] The market matured and stabilized by the 1920s,[380] growing more or less into its modern incarnation,[381] and ever since advertisers have been the primary market for typefaces.[382] Helvetica, for instance, was developed strictly as a result of the unmet demand of advertisers.[383] Advertisers need to gain someone's attention before they can convey their message to him. Their problem, be they Victorian advertisers or contemporary ones, is the same: how to be heard over all the shouting.[384] Typeface design, to the extent that it serves advertising,

---

typeface. *Id.* at 256–61.

371. LOXLEY, *supra* note 56, at 207; King, *supra* note 96.

372. *See* MCLEAN, *supra* note 342, at 56.

373. *See* HELVETICA, *supra* note 67.

374. CAHALAN, *supra* note 68, at 158.

375. *See id.* at 77–83.

376. *See id.* at 163.

377. *See* BAINES & HASLAM, *supra* note 34, at 68.

378. LAWSON, *supra* note 85, at 308.

379. *See id.* at 243–44, 253–55. When sans serif faces became popular in the 19th century, there was a dearth of them, and they had to be developed quickly to meet demand. FRIEDL, *supra* note 322, at 40–41.

380. *See* LAWSON, *supra* note 85, at 253–55.

381. FRIEDL, *supra* note 322, at 54–55.

382. CHAPPELL & BRINGHURST, *supra* note 62, at 195.

383. BLACKWELL, *supra* note 85, at 102.

384. CAHALAN, *supra* note 68, at 171 (Herman Zapf commenting on how display typefaces have to capture readers' attention); *see* HELLER & FILI, *supra* note 100, at 59

therefore became a search for novelty, where the subtle messages conveyed by letters' form is as significant, at least for the advertisers, as the words made from them.[385] The progression of display faces at the end of the 19th century was one where each subsequent design was meant to out-shout the previous one.[386] As advertising budgets grew in the first part of the 20th century to keep pace with other advertising, there was a commensurate need for new, novel typefaces to make campaigns, products, and corporations distinctive.[387] In this way, because typefaces are so important for a business' image, the demands of advertising have become the dominant source of demand for new typefaces.[388]

Because advertising is such a large market for typeface designs, there is an all important link between aesthetic movements and fashion trends on the one hand and new typeface designs on the other: the avant-garde quickly becomes commodified by advertisers.[389] Indeed, it is necessary for them to do so, since the avant-garde is by definition the source of novelty.[390] This commodification accelerates the obsolescence of typefaces: designers often react to commodification—which bastardizes and corrupts the original aesthetic—with a new, oppositional aesthetic, beginning the cycle anew.[391] Helvetica, for instance, was once radically Modern. It has since become the emblematic corporate typeface.[392] A Grunge typeface, for instance, is oppositional, its incongruities and pseudo-sloppiness contrasting with what has come to be viewed as the congruous blandness, suitable for a corporation, of Helvetica. Elaborate curlicue typefaces developed toward the end of the 1990s were similarly oppositional to Helvetica's Modernism.[393]

(commenting on how the ornate typography of Victorian advertising—a "cacophony" as it's sometimes referred to—eventually lead to a more simplified, minimal typographic aesthetic in advertising).

385. *See* LAWSON, *supra* note 85, at 253–55 (noting some exotic but short-lived designs).

386. *See id.* at 308.

387. *See* HELLER & FILI, *supra* note 100, at 12 ("The reason that so many type styles currently exist is that the turn-of-the-century advertising boom required a large number of different styles in order to simulate diverse voices.").

388. *See* LOXLEY, *supra* note 56, at 3.

389. *See* CAHALAN, *supra* note 68, at 77–82 (explaining how typeface designed to be subversive and self-consciously avant-garde became used in corporate advertising and, in one instance, a large corporation's annual financial report); HELLER & FILI, *supra* note 100, at 95, 111, 130, 182 (the avant-garde Modern movements beginning in the 1920s eventually become commodified in advertising).

390. *See* BLACKWELL, *supra* note 85, at 34.

391. *See* FRIEDL, *supra* note 322, at 57 ("Art Nouveau's heyday lasted for only about ten years. Its end was brought about by the superficial, industrial mass production of tasteless products and by trivial graphical designs, devaluing what were once visionary and euphoric ideas.").

392. *See* HELLER & FILI, *supra* note 100, at 160.

393. *See* Liu, *supra* note 113. Helvetica itself effectively replaced Futura, a typeface created in 1927, and which had been dominant in the advertising industry for 25 years. BLACKWELL,

Advertisers and corporations cannot afford for their message or image to look dated, or even common.[394] When this happens, they will move on to a new design, or commission one.[395] But can't a reasonably suitable—and previously under-used—typeface be found among the quarter million available, especially when commissioning a new one is much more expensive than buying an existing one?[396] Yes, maybe. But the spread of a typeface can be limited contractually, where the commissioner elicits from the commissionee an obligation to not sell or license the typeface he has created to anyone else.[397] This suggests that advertisers and corporations are aware that the unchecked spread of a typeface dilutes the message it was chosen to convey, or that it shortens the design's useful life.[398] By keeping computer fonts entirely to themselves, there is no chance they will end up shared over the Internet. Those wishing to piggyback on the newfound popularity used in a large ad campaign confers on a typeface have to plagiarize, rather than download, it. This not only takes work, time, and skill by typeface designers already constrained some by industry norms, but the result might not be a faithful reproduction anyway.

E.   *Piracy, Prices, Bundling, Network Effects*

Intellectual property orthodoxy views piracy as a threat to the incentive to create. Because typeface designs are almost always embodied as digital files, they are much more of a pure public good than even fashion designs. They are, in this respect, much more like digital music files.[399] As such, they are usually shared in the same manner, via

---

supra note 85, at 54–55.

394*. See* CAHALAN, *supra* note 68, at 129–37 (analyzing Rotis, a display typeface popular in the latter 1990s, which became ubiquitous in ad copy, thereby losing its effectiveness in the medium).

395. The purest example of the needs of advertising leading to the creation of a new typeface is when an advertiser or corporation commissions a typeface for an ad campaign or for corporate branding. *See* BLACKWELL, *supra* note 85, at 115 (describing commission of a typeface for an ad campaign with certain connotations). Because of the relatively large fee (tens thousands of dollars, possibly. Liu, *supra* note 113) commissions for corporate identities are the holy grail of type designers. *See* BLACKWELL, *supra* note 85, at 15.

396. A commercial client could also commission an inexpensive copy of a typeface he likes, but you tend to get what you pay for. Having a job done properly can save money that might have to be spent fixing a bad clone, which might lack a complete character set, have badly adjusted kerning pairs, be poorly copied, etc. *See* Posting of marian bantjes to Typophile, The High Price of Piracy, http://typophile.com/node/15647 (Oct. 14, 2005, 13:51).

397*. See* CAHALAN, *supra* note 68, at 88.

398. Of course, the typeface's designer has a countervailing interest: to be able to also sell his design to as many people as he can. Typefaces used in major ad campaigns tend to then be used in many others. A typeface designer does not want to have his now in-demand typeface cordoned off from general sale. *See* Jacobs, *supra* note 306, at 32. For this reason, the right of exclusive use, if it exists, is often of a limited duration.

399*. See* Walker, *supra* note 302 (noting a designer's comments comparing the file-sharing

bittorrent indexers, one-click uploaders,[400] and Usenet groups. This kind of piracy is not the kind of, say, 1992's, when *Adobe Systems, Inc. v. Southern Software, Inc.*,[401] the case declaring computer fonts to be copyrightable, was decided. In *Adobe*, the plaintiff used a font editor to slightly alter 1,100 Adobe computer fonts,[402] and then licensed them to various organizations, essentially packaging them on a CD and selling them at a deep discount.[403] The Internet, then, has changed the pirate's business model too. While finding a computer font can take more time than an album or song,[404] once found, the monetary value of the computer fonts that can be downloaded for free is quite shocking. I found one link to a collection of computers fonts with a total retail value of over $50,000.[405] It's no wonder, then, that designers clamor for protection, and cite computer font file-sharing as a harbinger of doom.[406] But, as with any other industry implicitly relying on classic public goods theory in place of copyright protection, where's the evidence that doom has or will come?[407]

Despite the availability of free pirated computer fonts on the Internet, it's doubtful that, to the extent prices for computer fonts have fallen in the digital age,[408] file sharing is to blame.[409] This is not to say

---

of computer fonts to that of MP3 files). The file size of the whole range of sizes and weights of a professional font is within the same ballpark as the typical digital music file, representing one song.

400. Anecdotal evidence suggests that, because of the low cost of memory and the inherent difficulty of detecting files that infringe copyrights, one-click hosting sites are now more commonly used for file sharing than bittorrent clients. *See generally* Posting of Janko Roetggers to NewTeeVee, Piracy Beyond P2P: One-Click Hosters, http://newteevee.com/2007/06/17/one-click-hosters/ (June 17, 2007. 00:00).

401. Adobe Sys. v. S. Software Inc., No. C 95-20710 RMW (PVT), 1998 WL 104303 (N.D. Cal. Feb. 2, 1998).

402. Slightly altering computer fonts before selling discount versions was a common practice, probably born from a misguided notion that by changing the computer font and altering the computer code that described the letters, the result was not infringing on software copyrights.

403. *Adobe*, 1998 WL 104303 at *3–*6. There are still companies that copy free computer fonts onto CDs and sell them at a low price. These, I guess, are either for people who think or are misled into thinking that such things are legal, or who have somehow discovered the Internet but not peer-to-peer file-sharing.

404. Adobe seems to be pretty assiduous at having uploads of its Font Folio to one-click hosting sites removed. Adobe apparently has a unit whose sole duty is to ferret out piracy. CAHALAN, *supra* note 68, at 93.

405. *See* Developer X, The Best and Most Expensive Fonts (1500 Collection), http://dxjo.net/blog/?p=729 (last visited Apr. 14, 2010).

406. *See*, *e.g.*, Liu, *supra* note 113 (referring to comments of Brian Heuckroth, senior product marketing manager for typefaces for Adobe).

407. *See* Snyder, *supra* note 82, at 125, 125 n.151 (stating there are no reliable statistics on losses caused by piracy or because typeface designs are in the public domain).

408. "[T]he industry has suffered a meltdown in profits." Liu, *supra* note 113. Designs that before sold for hundreds of dollars now might sell for "less than $50." *Id.; see also* Rothenberg, *supra* note 112 (documenting the fall in prices).

there's no file sharing. The fact that $50,000 worth of computer fonts is out there for the downloading is extraordinary, but not everyone is convinced that piracy is to be faulted for the fallen prices of computer fonts.[410] The democratization of typeface design bears some responsibility.[411] With more designers and foundries in the market than ever before, prices were destined to fall. Another culprit often cited for the lower prices—and one closely related to the democratization of typeface design—is the sheer abundance of typefaces made possible by digitization. But the biggest culprit is probably the practice of giving away computer fonts for free, which marginalizes the retail market and reduces, in the minds of consumers, the value of computer fonts.[412] Free computer fonts come, basically, in three versions: those given away on the Internet because their quality is low enough that nobody would have paid for them anyway,[413] those given away to lure customers to pay for other computer fonts (these can either be high quality originals or copies of existing designs),[414] and those given away as part of a bundle with other software. The first and second has been made possible by the fact that more designers are making more typefaces, of varying degrees of quality. The latter is a phenomenon any computer user knows: every operating system comes pre-loaded with computer fonts (designs often knocked-off, remember, to avoid licensing fees).[415] Since every consumer has at his disposal a bevy of free computer fonts, what incentive do they have to find other free computer fonts?[416] Of course, they would have an incentive if the computer fonts they received with their operating system were inadequate for their needs. But the evidence suggests that this is not

---

409. *See*, *e.g.*, BAINES & HASLAM, *supra* note 34, at 95 (arguing that it was inevitable prices would come down after digitization spread the typeface market to the general populace, making it no longer specialized). *Cf.* Felix Oberholzer-Gee & Koleman Strumpf, *The Effect of File Sharing on Record Sales: An Empirical Analysis*, 115 J. OF POL. ECON. 1 (2007) (arguing that the effect of file sharing on music sales has been a wash).

410. *See*, *e.g*, CAHALAN, *supra* note 68, at 93 (explaining that computer font distributor Eyewire does not believe that piracy affects their sales).

411. There is also the fact that the prices set in the days when typefaces were tied to proprietary systems—machine typesetting, phototypesetting, and early digital typesetting—were unsustainable once typeface designs were uncoupled from them. *See id.* at 30.

412. *See* King, *supra* note 96*; see generally* Discussion thread of Typophile, Free fonts, a good thing?, http://typophile.com/node/8407.

413. *See* Lipton, *supra* note 32, at 155 (providing examples of poor quality novelty designs obviously made by an amateur); Posting of Simonson, *supra* note 311 (explaining that free computer fonts are given away because they are low quality, with little effort invested).

414. *See* Walker, *supra* note 302; Typophile, FAQ Free, http://typophile.com/node/44453? (last visited Mar. 13, 2010) (providing a list of sites with free computer fonts). Many of these sites contain advertisements to the big foundries. *See* Acidfonts, Download Free Fonts, http://www.acidfonts.com (last visited Mar. 13, 2010).

415. Thirty-seven are given away with Windows, 120 with OS X. BLACKWELL, *supra* note 85, at 11.

416. *See* CAHALAN, *supra* note 68, at 38, 147.

the case. For one, most documents produced by consumers use one of two typefaces: Times New Roman or Helvetica/Arial.[417] More importantly, most consumers cannot access the professional-level features of a professional-level computer font because they do not have the software to do so: either their word processor lacks the capability,[418] or they do not own any desktop publishing software, which can be very expensive. Without the right software, there's very little reason for consumers to find the kinds of typefaces that require the most work and investment to create. And even if they do download them, this cannot be a lost sale: who would pay hundreds of dollars for features he cannot access? There are enough adequate free computer fonts, and finding pirated ones is just difficult enough, to ensure that the casual consumer is not a big culprit here.

In any case, consumers are not the largest market for typefaces, graphic designers are.[419] Computer fonts are also bundled with graphic design and desktop publishing software. Adobe is responsible for most of this, for the obvious reason that they are both a software developer and a type foundry. It gives away, for instance, more than one hundred of its computer fonts with its Creative Suite, which is a package of software for design professionals.[420] These computer fonts are high quality ones likely to have to be bought by graphic or book designers anyway. The value of these computer fonts, if sold separately,[421] far exceeds the value of the Creative Suite itself.[422] This suggests that what Adobe is most interested in is not selling typeface designs, but in maximizing the network effects of its software, where the optimal position is to be the company that

---

417. CHAPPELL & BRINGHURST, *supra* note 62, at 285. This phenomenon is not limited to just consumers. Some designers speculate that the typeface Palatino was so widely adopted as a corporate typeface because it was a default typeface on some computers and printers. CAHALAN, *supra* note 68, at 146.

418. For instance, Microsoft Word has about a 95 percent market share. Ina Fried, *Apple's iWork Emerges as Rival to Microsoft Office*, CNET NEWS, Jan. 23, 2006, http://news.cnet.com/Apples-iWork-emerges-as-rival-to-MicrosoftOffice/2100-1012_3-6030011.html. Consumers also commonly use Word for light page layout work. Word cannot access the typographic features (ligatures, superscript and subscript, small capitals, contextual and stylistic alternate character forms, etc.) made possible by OpenType. Even if a consumer had access to these features through Word, Word's typesetting is poor enough that it would overshadow any aesthetic benefit OpenType features would confer.

419. Postrel, *supra* note 122, 143–45.

420. Posting of Thomas Phinney to Typblography, http://blogs.adobe.com/typblography/2008/09/cs4_fonts.html (Sept. 25, 2008, 17:48).

421. *See* Adobe, Minion Pro, http://www.adobe.com/cfusion/store/html/index.cfm?store=OLSUS&event=displayFontPackage&code=1719 (last visited Feb. 1, 2010). Each weight in the typeface family Minion Pro is sold for $35. The complete Minion Pro family is included in Adobe's Creative Suite.

422. The Creative Suite begins at about $1,400. *See* Adobe, Adobe Creative Suite 4 Design Standard, http://www.adobe.com/products/creativesuite/designstandard/ (last visited Feb. 1, 2010).

dominates the market of a particular good, especially if that good is software.[423] Adobe, then, is like the Monotype and Linotype of the late 19th and early 20th century, releasing proprietary type, original or plagiarized, as a way to ensure the sales of their typesetting machines. Though Adobe might be the largest foundry in the world, selling computer fonts for them is just a sideline activity, a way for them to sell something else far more lucrative.[424] Adobe could even afford for its typeface design division to lose money, the benefit of bundling to Adobe being a net positive since it increases software sales.

If it's true that Adobe bundles free computer fonts to sell more software, then it might also prefer a certain amount of computer font piracy, despite protestations, and indeed lawsuits, to the contrary. Adobe benefits because piracy increases network size efficiently.[425] In essence, pirates distribute the goods a company is seeking to monopolize over the Internet, at no cost to the company.[426] Paying consumers are charged for the increased value of the network that piracy partly has been responsible for generating.[427] But to even implicitly condone piracy would be for a company to admit that it is price discriminating among different classes of consumers, where pirates are "charged" nothing.[428] By denouncing piracy, companies avoid upsetting the users who have paid. [429] This is, in fact, typical behavior for companies seeking to gain network effects advantages for their products.[430] It's telling, perhaps, that the Adobe computer fonts are the most common to be shared for free over the Internet. Finding even a fairly well-known (relatively speaking, of course)

---

423. Network effects occur when "the utility that a user derives from consumption of the good increases with the number of other agents consuming the good." Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 THE AM. ECON. REV. 424, 424 (1985). The classic example of an object whose value increases as more people use it is the telephone. One telephone is useless; a thousand are useful; a billion are indispensable.

424. BLACKWELL, *supra* note 85, at 156. Adobe did in fact begin its retail business selling computer fonts. Now, however, the tail wags the dog. *See* King, *supra* note 96.

425. Katz, *supra* note 318, at 167–68.

426. *See* Carrier, *supra* note 10, at 37–38 (describing how the public internalizes distribution by using the Internet).

427. Katz, *supra* note 318, at 167–68.

428. Price discriminating is the practice of selling a good at different prices according to a consumer's willingness to pay. It maximizes profit: more people buy the good because they can pay exactly what they are willing. Selling movie tickets at different prices depending on the time of day is an example of price discrimination. *See* LANDES & POSNER, *supra* note 2, at 39 (explaining price discrimination).

429. *See* Katz, *supra* note 318, at 179–85. Here Katz discusses Microsoft's acceptance of high piracy rates in China as a tool for surreptitiously achieving monopoly. And this despite public protestations otherwise, which serve to disguise motives that might, in fact, be viewed as either anti-competitive, or would upset paying U.S. consumers. *See also id.* at 214–15. Explicitly admitting to using piracy to exclude other competitors may be evidence of antitrust violations. *Id.* at 94.

430. *See id.* at 179–85 (describing Microsoft tactics).

computer font from an independent foundry is difficult, if not impossible. For instance, Stephen Heller, a noted expert in the field, picked seven of the "most popular" typefaces released by independent foundries over the past ten years.[431] After some searching, I could not find pirated versions of any of them. Contrast this with Adobe's complete Font Folio, which retails for $2,600,[432] and was relatively easy to find.

The conclusion that Adobe develops computer fonts mainly to sell software is supported by some interesting anecdotes. First, for a short period early in its history, when Adobe's PostScript was by far the dominant page description language (such software being a prerequisite for desktop publishing), Adobe tried to solidify its position by encrypting the computer fonts used with PostScript so that the computer fonts could not be used with any other page description language (and, by extension, any desktop publishing program).[433] Because Adobe at the time was the main supplier of computer fonts, this tactic was effective.[434] A rival computer font maker soon cracked the encryption, and the closed world of computer fonts inevitably opened. Now, Adobe exploits the openness, but the anecdote reveals that the company, almost from the outset, recognized how computer fonts could be used, or misused, to gain an advantage in its software market.[435]

In *Agfa Monotype v. Adobe*,[436] two of the largest foundries in the world (Monotype and ITC) sued Adobe for violating the anti-circumvention provisions of the Digital Millennium Copyright Act (DMCA).[437] The dispute was over Adobe's Acrobat, a PDF viewer, which Adobe had recently changed to permit embedded computer fonts to be editable, thus allowing users to complete forms and change text without having licenses to the computer fonts of a given PDF.[438] What's interesting about the case is not the DMCA claim, but that it reveals first that computer fonts had long been embedded in documents,[439] and second that Adobe did not care, as did the other two foundries, about uses of computer fonts, including Adobe's own, that potentially violated the licenses of any one of the three foundries. Moreover, embedded computer fonts are essentially copies of computer fonts.[440] If someone

---

431. *See* Steven Heller, *Acceptance Letters*, N.Y. TIMES, Aug. 29, 2004, at 26.
432. Font Folio, *supra* note 83.
433. King, *supra* note 96.
434. *Id.*
435. *Id.*
436. Agfa Monotype Corp. v. Adobe Sys., Inc., 404 F. Supp. 2d 1030 (N.D. Ill. 2005).
437. *See* 17 U.S.C § 1201(a)(1) (2004).
438. *Agfa Monotype*, 404 F. Supp. 2d at 1030–31.
439. *Id.* at 1032–33.
440. *Id.* at 1031.

wanted to steal a computer font, they could theoretically do it by pulling it out of the file that makes up the PDF.[441] For a time, this was a cause of concern in the industry. The concern is a little silly in retrospect: trying to pirate typefaces from PDF files is not only horribly inefficient, but some important features of a computer font (kerning tables, for instance) cannot be extracted this way.[442] It's much easier to obtain a computer font via traditional file-sharing techniques. Nevertheless, the theoretical risks of having computer fonts copied applied just as much to Adobe as it did to the other two foundries. But Adobe, of course, cares far more about making Acrobat the standard PDF viewer than about any lost revenue from its foundry division. And Acrobat would have taken a tremendous hit if computer fonts could not have been embedded or been made editable. The whole *raison d'être* of PDFs would have been lost— PDF documents wouldn't have looked like the original. What's more, Adobe exploits Acrobat's dominance as a PDF viewer and editor to sell its Creative Suite set of applications that often make PDFs as their output. If the usefulness of Acrobat is diminished, then so is this selling point.[443]

The last thing to consider is Adobe's development, at considerable time and expense, of its "Pro" line of computer fonts. Part of what entitles an Adobe computer font the "Pro" moniker is the inclusion of optical sizes among the character set. Adobe is one of the few foundries that makes computer fonts with extensive sets of optical sizes.[444] Graphic designers and typographers are the only ones likely to employ optical sizes. And design professionals are likely to use Adobe products.[445] In

---

441. Posting of Goran Soderstrom to Typophile, http://typophile.com/node/48411 (Aug. 14, 2008, 13:16). Computer fonts extracted from a PDF often lose many OpenType features, if they exist, in the process. *Id.*

442. *See* Posting of Bill Troop to p90.net, http://type-design.p90.net/lists/displayarticle.html?msgid=15189 (Oct. 2, 2003, 02:45) (noting the poor quality of some existing PDF extractions of a computer font). This is not even to mention that only the characters used in a PDF can be stripped from it.

443. The case was dismissed on summary judgment because nothing Agfa Monotype did "effectively control[ed] access to a work protected under" the DMCA. *Agfa Monotype*, 404 F. Supp. 2d at 1036–37 (quoting 17 U.S.C. § 1201(a)(2)(A) (2004)). Agfa Monotype therefore could not have proved the elements necessary for a DMCA violation. *See id.*

444. *See* ADOBE, *supra* note 131, at 11–12. Perhaps Adobe is almost alone in making optical sizes because Microsoft Word, by far the most popular word processor, cannot access OpenType features. If Microsoft Word cannot access OpenType features, there is less incentive for foundries to design professional-level computer fonts that can. Also, even among software that can take advantage of optical sizes, none does so automatically. *See id.* That is, scaling a font to a large size, for instance, does not mean that the correct optical size, compensating for the way in which a scaled-up character can look too thick, is "applied." Instead, the user has to apply the desired optical size, and only graphic designers and typographers are likely to do so.

445. The only serious rival to InDesign, Adobe's desktop publishing program, is QuarkXPress. InDesign is a direct descendent of Aldus Pagemaker, which is credited as being

this regard, Adobe's typefaces serve like almost any other feature of the software: to make the software more attractive.

F.   Non-monetary Incentives and Amateur Innovation

Lewis Hyde's classic *The Gift*[446] is the essential starting place for anyone interested in an artist's intrinsic motivations for creating art. In it, Hyde describes the exchange between artist and consumer as a gift exchange analogous to that of many non-Western cultures (where the artist's creation and abilities are also a gift to the artist). The nature of the exchange is destroyed when art is treated as a commodity with value, rather than an item of worth.[447] When expression is treated as having market value, but not necessarily any worth, we tend to get works that only have a market value.[448] In other words, we get works that are sometimes no more than a commodity. The upshot of the book, for my purposes, is that artists have varied and deep motivations for creating art, the least of which is money.[449] Rather than saying that "[n]o man but a blockhead ever wrote, except for money,"[450] Samuel Johnson would have been more accurate in saying that "no man but a blockhead, *in a market-industrial society*, ever wrote, except for money."[451] The corollary would be that "no man not in a market-industrial society ever wrote for money"; more still, "nobody ever creates Art for money." This is a gross reduction of a rich book, but the point is that the incentive thesis, when it comes to Art, is hopelessly simplistic. Hyde is not the only one to have proposed that money is not the only motivation for producing expressive works,[452] nor did he limit his discussion to fine art. Scientists, for instance, publish in journals for prestige, recognition, status, and to make a contribution to their field.[453]

---

the application that made the original Macintosh successful in 1984. And the original Macintosh is credited as the device that started the digital design revolution, included among which is the revolution in typeface design. *See* LOXLEY, *supra* note 56, at 231–32.

446. LEWIS HYDE, THE GIFT: IMAGINATION AND THE EROTIC LIFE OF PROPERTY (Vintage Books 1983) (1979).

447. *Id*. at xi-xii.

448. *Id*.

449. *Id*. at 160–272.

450. JAMES BOSWELL, THE LIFE OF SAMUEL JOHNSON 731 (R.W. Chapman ed., Oxford World's Classics 1998) (1791).

451. Johnson is sometimes cited as being the first professional writer, in that his (meager) income totally derived from it. *Id*.

452. *See*, *e.g.*, Nadel, *supra* note 72, at 811–12 nn.109–119 (citing examples of Aaron Copland, Bach, and others); Plant, *supra* note 12, at 167–69 ("Some of the most valuable literature that we possess has seen the light" without "direct monetary reward"). Don't forget that Boswell's immediate retort to Johnson was: "[n]umerous instances to refute this will occur to all who are versed in the history of literature." BOSWELL, *supra* note 450.

453. HYDE, *supra* note 446, at 77–84. Sometimes, in fact, they have to pay journals to publish their work. *See also* William M. Landes & Richard Posner, *An Economic Analysis of*

Typeface design is no exception to the argument that expressive works are made for reasons other than money. It can't be: with or without copyright protection, it is very difficult to make a living designing type.[454] Plenty of designers have commented on the non-monetary motivations they have for designing, motivations they often compare to those of fine artists.[455] However, in this paper I will gloss to some extent the kinds of intrinsic motivations behind type design. For one, typefaces, because of their inherent utility and necessity, have always been much more of a commodity than fine arts. But I mention non-monetary incentives for creating type because of the democratization of typeface design made possible by digitization. Whereas before the high overhead required to design and make type meant that the profession was only open to those in it for commercial gain, now amateurs with little hope or care to make money can create and distribute their own designs. The democratization of type designs, and their freedom from proprietary typesetting systems, is often criticized because untrained amateurs can now enter the field and offer low quality typefaces.[456] Should amateur creations be regarded as legitimate? That is, do they count as a new example of an expressive work in the category of typeface design? Indeed, digital foundries do not discriminate between submissions by amateurs and professionals. They will license them both.[457] The focus of this paper is more on professional designers (the kind, anyway, who at least hope to earn a living, or part of a living, through type design), but the question is important. It's true that many amateur designs are, well, amateurish (remember the letters on the Christmas trees?). They may lack any kind of aesthetic sensibility. They may also lack features that a professional graphic designer or typographer would need, though the same is true of many professional designs. But whenever you discount the potential of amateurs in a given field you run the risk of being on the wrong side of history. While some designs might not be technically or aesthetically proficient, the great innovations that come to define the next era of a field often come from the current generation's amateurs and outcasts.[458] On the whole, then, regardless of whether an amateur design can be counted as a new instance of an expressive work, the democratization of

---

Copyright Law, 18 J. LEGAL STUD. 325, 331 (1989).

454. *Cf.* Ku, *supra* note 9, at 306–07 (noting that musicians rarely make money from royalties).

455. *See*, *e.g.*, LOXLEY, *supra* note 56, at 235 (noting that typefaces are designed for the challenge and enjoyment); Rock, *supra* note 338, at 123 (famed type designer Matthew Carter comparing the "pure[] reasons" type designs are created to the reasons fine arts are created).

456. *See*, *e.g.*, HELLER & FILI, *supra* note 100, at 9.

457. *Id.* at 186.

458. *See* CAHALAN, *supra* note 68, at 31 (citing a quote from a critic expressing a similar sentiment).

type contributes to the level of innovation in the field. Digitization and amateurism combine to question the incentive thesis and the need for copyright protection:

> "[I]ncentives" is merely a metaphor, and as a metaphor to describe human creative activity it's pretty crummy . . . . [T]he better metaphor arose on the day Michael Faraday first noticed what happened when he wrapped a coil of wire around a magnet and spun the magnet. Current flows in such a wire, but we don't ask what the incentive is for the electrons to leave home. We say that the current results from an emergent property of the system . . . .[459]

CONCLUSION

This paper has demonstrated how several mechanisms collaborate to create an environment in which an abundance of typefaces are designed, even though typefaces in the United States cannot now, or maybe ever, be copyrighted. Typefaces are functional objects, necessary for literate societies who print words on paper or display them on screens. As such, some typefaces must exist. And as long as some exist, the type design industry will be subject to the mechanisms that allow it to be innovative. Technology is one of those mechanisms. Because different technologies have limitations that affect typefaces, new designs, compensating for the limitations, have to be made when a technology is introduced. New technologies also allow typefaces to have features or benefits that were not previously possible. The market demands, and is willing to pay for, access to these features and benefits. Technology has also lead to the digitization of the type design process. This has caused an explosion in the number of type designers, and typeface designs. Though digitization of the industry has decreased the quality of designs in some cases, it has just as often increased quality.

Because the type design industry is relatively small and close-knit, norms within the industry are effective at mitigating plagiarism within it. This phenomenon comports both with general theories of norms, and with observations from other industries in intellectual property law's open areas that also effectively employ norms to reduce copying. Even when norms fail, typefaces, especially those that require the most time and investment to design, are resistant to plagiarism. Typefaces are also subject to the vagaries of artistic movements and fashion-like cycles. As tastes change, which they do rather quickly, new typefaces have to be made to comport with the new aesthetic. Advertising and the advertising

---

459. Eben Moglen, *Anarchism Triumphant: Free Software and the Death of Copyright*, 4 FIRST MONDAY, Aug. 2, 1999, *available at* http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/684/594.

industry is an important cog in this process helping, among other things, to speed the fashion-cycle.

Typefaces are also non-rivalrous, almost always existing as digitized computer fonts. They are therefore subject to file-sharing, like any other digital media. However, file-sharing probably has not damaged the type design industry. Among the most likely culprits for the reduction in the price of computer fonts is the practice of bundling computer fonts with operating systems and other software. This is especially true among software geared to graphic design professionals. Adobe, among the largest foundries in the world, primarily creates new typefaces to make its software, which is a much more lucrative business for it, more attractive.

Other analyses of industries operating in the open areas of intellectual property law have shown how they, too, can be innovative, creating significant new expressive works. The more interesting question is not how any one industry operates in intellectual property law's open areas, but whether any industry now protected by intellectual property laws would be sufficiently innovative if protection were taken away. The small number of industries that have been examined so far are probably not a large enough sample set from which an answer can be derived. More observations are therefore needed.[460] What might become apparent upon such a cataloging is a general principle. This paper has shown how many mechanisms work together to encourage innovation in the typeface industry. This suggests that other industries could also have several mechanisms that work together, often in unexpected ways that could never be predicted by mere theory, to produce innovation in expressive works without protection from copyright or other intellectual property laws.[461]

---

460. *See* Posting of Chris Sprigman to The University of Chicago Law School Faculty Blog, Some Negativity About a Positive Theory of IP's Negative Space, http://uchicagolaw.typepad.com/faculty/2006/11/some_negativity.html (Nov. 16, 2006, 14:43).

461. *See* Raustiala & Sprigman, *supra* note 28, at 1762 (noting that the fashion industry thrives without intellectual property protection because of its idiosyncrasies, and that all industries producing expressive works are similarly idiosyncratic).

ACADEMIC AUTHOR OBJECTIONS TO THE GOOGLE BOOK SEARCH SETTLEMENT

PAMELA SAMUELSON*

INTRODUCTION

The vision of a universal digital library that would contain the accumulated knowledge embodied in tens of millions of books from the collections of major research libraries—a digital library that would last forever—is unquestionably an inspiring one.[1] Proponents of the Proposed Amended Settlement Agreement (PASA) of the *Authors Guild v. Google* lawsuit hold out this vision as the principal reason why courts

---

    1. Google is far from the only seer to recognize the societal value of a vast digital library of books. *See*, *e.g.*, ROBERT DARNTON, THE CASE FOR BOOKS: PAST, PRESENT, AND FUTURE 10–20 (2009).

491

should approve this proposal.[2] The PASA would give Google a license to make available to members of the public millions of books and inserts (e.g., separately authored book chapters) published in the United States, Canada, the United Kingdom, and Australia.[3] Following approval of the PASA, Google plans to make digital books available for free through one public access terminal at each public library and through "preview" uses of the books (displaying up to 20% of their contents) in response to Google search queries.[4] Full texts of these books could also become available through institutional subscriptions or consumer purchases of individual books.[5] While academic authors and researchers can easily understand the appeal of this vision and heartily hope that this vision will be realized, this Article will explain why approval of the PASA is unlikely to fulfill the universal digital library ambition and why academic authors should object to some of its important terms.

I. THE GENESIS OF THE PROPOSED GOOGLE BOOK SETTLEMENT

Google did not initially set out to create a universal digital library with the Google Book Search (GBS) project. In early public statements, Google spokesmen proclaimed that Google was scanning books to promote greater public access to them by indexing their contents, providing a few small snippets of texts responsive to Google users' search queries, and supplying links to libraries from which relevant books could be obtained and to vendors from whom the books could be purchased.[6] While Google scanned some books for GBS with the permission of copyright owners through its Partner Program,[7] the overwhelming majority of books in the GBS corpus have come from the collections of major research libraries, such as the University of Michigan's library.[8] These libraries contracted with Google to provide it with books to be

---

2. *See* Sergey Brin, *A Library to Last Forever*, N.Y. TIMES, Oct. 8, 2009, at A31; *see also* Proposed Amended Settlement Agreement, Authors Guild, Inc. v. Google Inc., No. 05 CV 8136 (S.D.N.Y. Nov. 9, 2009), http://thepublicindex.org/docs/amended_settlement/amended_settlement.pdf [hereinafter PASA].

3. PASA, *supra* note 2, §§ 1.13 (definition of "Amended Settlement Class"), 1.19 (definition of "Book"), 1.75 (definition of "Insert").

4. *Id.* §§ 4.3 (preview uses), 4.8(a)(i) (library access).

5. *Id.* §§ 4.1 (institutional subscriptions), 4.2 (consumer purchases).

6. *See* Eric Schmidt, *Books of Revelation*, WALL ST. J., Oct. 18, 2005, at A18. At that time, GBS was known as "Google Print." *Id.* Other early public statements characterized Google Books as an "enhanced card catalog." *See* Google Books Library Project, http://books.google.com/googlebooks/library.html (last visited Feb. 11, 2010).

7. Schmidt, *supra* note 6.

8. *See, e.g.*, Jeffrey Toobin, *Google's Moon Shot*, NEWYORKER.COM, Feb. 5, 2007, http://www.newyorker.com/reporting/2007/02/05/070205fa_fact_toobin (reporting that the University of Michigan expected Google to copy all seven million books in its collections in six years).

scanned, in return for which they expected to get digitized copies of books from their collections for preservation and other legitimate purposes.[9] Google's library partners also expected Google to provide links to books in their collections so that readers would have better access to books.[10]

There are currently about 12 million books in the GBS corpus, of which about 2 million are in the public domain and 10 million in-copyright.[11] Google has consistently asserted that this scanning, indexing, and snippet-providing is a fair and non-infringing use of in-copyright books.[12]

The Authors Guild (Guild) and the Association of American Publishers (AAP) disagreed with this assessment. In September 2005, the Guild and three of its members brought a class action lawsuit against Google alleging that its book-scanning project was copyright infringement.[13] Soon thereafter, five major trade publishers—at the time, all members of the Google Partner Program—brought a similar lawsuit.[14] Rather than litigate, however, the parties soon entered into settlement negotiations.[15] Representatives of the publisher plaintiffs and of the Authors Guild approached Google with the idea of settling the two lawsuits by combining them into one class action. The combined class action would have a publisher subclass and an author subclass, and the settlement would establish a new digital marketplace for books.[16]

---

9. A collection of agreements between several major research universities' libraries and Google concerning the scanning of books from the libraries' collections can be found at the New York Law School website, The Public Index, http://thepublicindex.org/documents/libraries (last visited Mar. 13, 2010).

10. *See* About Google Books, http://books.google.com/googlebooks/about.html ("borrow this book" links provided for Google Books).

11. *See*, *e.g.*, Posting of Fred von Lohmann to DeepLinks Blog, Google Book Settlement 2.0: Evaluating Access, http://www.eff.org/deeplinks/2009/08/google-book-search-settlement-access (Nov. 17, 2009).

12. *See* Schmidt, *supra* note 6; Toobin, *supra* note 8.

13. *See* Class Action Complaint, Authors Guild, Inc. v. Google Inc., No. 05 CV 8136 (S.D.N.Y. Sept. 20, 2005), http://thepublicindex.org/docs/complaint/authors.pdf.

14. *See* Complaint, McGraw-Hill Cos. v. Google Inc., No. 05 CV 8881 (S.D.N.Y. Oct. 19, 2005), http://thepublicindex.org/docs/complaint/publishers.pdf.

15. *See*, *e.g.*, Objection of Scott E. Gant to Proposed Settlement, and to Certification of the Proposed Settlement Class and Sub-Classes at 3 n.5, Authors Guild, Inc. v. Google Inc., No. 05 CV 8136 (S.D.N.Y. Aug. 19, 2009), http://thepublicindex.org/docs/objections/gant.pdf [hereinafter Gant Objection] (pointing out how little discovery and motion practice have been done in the case). At the October 7, 2009 status conference, Michael Boni, lawyer for the author subclass, stated that no depositions had been taken in the case. Transcript of Status Conference at 9, Authors Guild, Inc. v. Google Inc., No. 05 CV 8136 (S.D.N.Y. Oct. 7, 2009), http://thepublicindex.org/docs/case_order/Status%20Conference%20Transcript.pdf.

16. *See* Objection of Amazon.com, Inc. to Proposed Amended Settlement at 2, Authors Guild, Inc. v. Google Inc., No. 05 CV 8136 (S.D.N.Y Jan. 27, 2010), http://thepublicindex.org/docs/amended_settlement/amazon.pdf (describing the negotiations). These negotiations produced the Proposed Settlement Agreement, Authors Guild, Inc. v.

Under this deal, Google would pay a relatively modest sum (such as the $60 per book in the Proposed Settlement Agreement, or PSA) to copyright owners whose books it had scanned, and the settlement class would then give Google a license to commercialize out-of-print books.[17] Copyright owners would get paid most of the revenues from this commercialization through either the Google Partner Program or a Book Rights Registry that would be created with funds from the settlement.[18] Google found this proposition agreeable; and the parties spent thirty months hammering out the details.[19] Google's library partners participated in some of these negotiations, for the agreement included commitments to provide institutional subscriptions at reasonable prices to these libraries, along with releases of liability that the libraries might otherwise have incurred for contributing to Google's scanning project.[20] The PSA was announced on October 28, 2008.[21]

II.   MIXED REACTIONS TO THE PSA

Harvard's Librarian, Robert Darnton, was among the first commentators to express reservations about the PSA.[22] Though he recognized the substantial benefits of improving access to books, Darnton worried about the long-term consequences of giving one firm a monopoly over access to millions of books.[23] Darnton's concerns were echoed and amplified in a joint statement by three library associations—the American Library Association, the Association of Research Libraries,

---

Google Inc., No. 05 CV 8136 (S.D.N.Y. Oct. 28, 2008), http://www.googlebooksettlement.com/intl/en/Settlement-Agreement.pdf [hereinafter PSA].

17. PSA, *supra* note 16, §§ 2.1(a)–(b), 2.2.

18. *Id.* § 2.1(c).

19. *See* Press Release, Google Inc., Authors, Publishers, and Google Reach Landmark Settlement (Oct. 28, 2008), http://www.google.com/intl/en/press/pressrel/20081027_booksearchagreement.html [hereinafter Google Press Release].

20. *See* PSA, *supra* note 16, arts. IV, VII, VIII, X.

21. *See* Google Press Release, *supra* note 19. The PSA anticipated that $45 million would be set aside as payouts to rights holders whose books Google had already scanned, $60 for each book, $15 for each insert, and $5 for each partial insert. PSA, *supra* note 16, § 2.1(b). The lawyers for the author and publisher subclasses will get a total of $45.5 million if the settlement is approved. *Id.* § 5.5 (author subclass lawyers will get $30 million); Updated Notice of Class Action Settlement Agreement 27, http://static.googleusercontent.com/external_content/untrusted_dlcp/www.googlebooksettlement.com/en/us/intl/en/Final-Notice-of-Class-Action-Settlement.pdf (publisher lawyers will get $15.5 million from the settlement between Google and the publishers in McGraw-Hill Cos. v. Google Inc., No. 05 CV 8881 (S.D.N.Y.)). The rest of the settlement funds are being used to create the new collecting society, the Book Rights Registry, which will be created upon approval of the settlement. PSA, *supra* note 16, §§ 5.1, 5.5.

22. Robert Darnton, *Google and the Future of Books*, N.Y. REV. BOOKS, Feb. 12, 2009, at 9.

23. *Id.*

and the Association of College and Research Libraries—on the PSA.[24] On the one hand, they welcomed the greatly enhanced public access to books that approval of the settlement could provide,[25] and recognized that the settlement was the most efficient way to "cut[] the Gordian knot" of high transaction costs of rights clearances that might otherwise hinder creation of a digital book database.[26] Yet, they worried that because no one but Google would be able to create an institutional subscription database (ISD) of these books, subscription prices would over time become prohibitively expensive.[27] And unless the court retained jurisdiction and engaged in vigilant oversight, the associations warned that approval of the settlement might "compromise fundamental library values such as equity of access to information, patron privacy, and intellectual freedom."[28] In the PSA, Google reserved the right to exclude books from the ISD for editorial or non-editorial reasons.[29] There is reason to expect governments and other groups to pressure Google to exercise this censorship power.[30]

University faculty also became concerned about the proposed settlement. In late April 2009, for example, sixteen professors sent a joint letter to Judge Denny Chin who was scheduled to preside over the fairness hearing on the PSA to ask for a six month postponement of that hearing and a concomitant extension of time for opting out, commenting on, or filing objections to the settlement.[31] This letter pointed to considerable ignorance and confusion about the proposed settlement among academic authors, and expressed concern that some of its terms, including provisions for close monitoring of uses of books without privacy protections and restrictions on annotation-sharing, were inconsistent with norms of academic communities.[32] At the behest of the University of California-wide committee on libraries, the Academic Council of the University of California decided to send a letter to the judge to express reservations about the risks of excessive pricing,

---

24. Library Association Comments on the Proposed Settlement, Authors Guild, Inc. v. Google Inc., No. 05 CV 8136 (S.D.N.Y. May 12, 2009), http://thepublicindex.org/docs/letters/acrl_ala_arl.pdf [hereinafter Library Comments].

25. *Id.* at 2.

26. *Id.* at 5.

27. *Id.* at 7–9. The core ISD that would be licensed to higher educational institutions would consist of all books eligible for such subscriptions (that is, all out-of-print books whose rights' holders have not opted to exclude their books from the ISD, plus any in-print books whose rights' holders have opted in to the ISD). PASA, *supra* note 2, § 4.1(a)(v).

28. Library Comments, *supra* note 24, at 2.

29. PSA, *supra* note 16, § 3.7(e).

30. von Lohmann, *supra* note 11.

31. Letter from Pamela Samuelson, Richard M. Sherman Professor of Law, Univ. of Cal., to Judge Denny Chin, Authors Guild, Inc. v. Google Inc., No. 05-CV-08136 (S.D.N.Y. Apr. 27, 2009), 17-15 Mealey's Litig. Rep. Intell. Prop. 14 (2009).

32. *Id*. at 2.

inadequate attention to open access preferences of academic authors, and lack of privacy protections that might result from approval of the GBS settlement without modifications.[33]

Judge Chin granted an extension of time for comments, objections, and opt-outs to September 4th, and rescheduled the fairness hearing for October 7th.[34] By the September deadline, approximately 400 comments, objections, and amicus curiae briefs had been filed with the court, the overwhelming majority of which were highly critical of the settlement.[35] France and Germany, as well as numerous publisher and author groups from other countries, were strongly opposed to the inclusion of foreign books in the settlement and expressed outrage at inadequacies of notice to foreign class members.[36] Some United States-based author organizations—notably including the National Writers Union—expressed strong opposition to the settlement, largely because its terms were unfair to authors,[37] a conclusion with which many authors seemed to agree.[38] A September 3rd letter on behalf of 65 academic authors objected to the settlement on numerous grounds, including the lack of

33. Letter from the Academic Council, Univ. of Cal., to Judge Denny Chin, Authors Guild, Inc. v. Google Inc., No. 05-CV-08136 (S.D.N.Y. Aug. 13, 2009), *available at* http://thepublicindex.org/docs/letters/ucfaculty.pdf.

34. Authors Guild, Inc. v. Google Inc., No. 05-CV-08136 (S.D.N.Y. Apr. 28, 2009) (order granting extension), 17-15 Mealey's Litig. Rep. Intell. Prop. 14 (2009).

35. *See* Brandon Butler, The Google Books Settlement: Who Is Filing And What Are They Saying? 3 (2009), http://www.arl.org/bm~doc/googlefilingcharts.pdf (categorizing various types of court filings).

36. Memorandum of Law in Opposition to the Settlement Proposal on Behalf of the French Republic at 7, Authors Guild, Inc. v. Google Inc., No. 05-CV-08136 (S.D.N.Y. Sept. 8, 2009), *available at* http://thepublicindex.org/docs/letters/french_republic.pdf; Memorandum of Law in Opposition to the Settlement Proposal on Behalf of the Federal Republic of Germany at 11, Authors Guild, Inc. v. Google Inc., No. 05-CV-08136 (S.D.N.Y. Aug. 31, 2009), *available at* http://thepublicindex.org/docs/letters/germany.pdf.

37. *See* Objections to Class Action Settlement and Notice of Intent to Appear on Behalf of Class Members Harold Bloom, et al. at 7-8, Authors Guild, Inc. v. Google Inc., No. 05 CV 8136 (S.D.N.Y. Sept. 8, 2009), http://thepublicindex.org/docs/objections/bloom.pdf [hereinafter Bloom Objections] (including the National Writers Union); *see*, *e.g.*, Posting of Motoko Rich to Mediacoder Blog, William Morris Advises Clients To Say No to Google Settlement, http://mediadecoder.blogs.nytimes.com/2009/08/07/william-morris-advises-clients-to-say-no-to-google-settlement (Aug. 7, 2009); Posting of Motoko Rich to Mediacoder Blog, Writers Groups Oppose Google Settlement, http://mediadecoder. blogs.nytimes.com/2010/01/06/writers-groups-oppose-google-settlement/ (Jan. 6, 2010) (reporting that the National Writers Union, the American Society of Journalists and Authors, and the Science Fiction and Fantasy Writers of America oppose the Google settlement as unfair to authors and are urging authors to opt out).

38. *See*, *e.g.*, Lynn Chu, *Very Important Notice to All Writers' Reps Clients*, WRITERS REPS, Dec. 22, 2009 ("We urge all of our clients, indeed all authors, to take advantage of this new opportunity to opt themselves out."); Posting of Ursula K. Le Guin to Book View Café Blog, Le Guin on the Google Settlement, http://blog.bookviewcafe.com/2010/01/07/le-guin-on-the-google-settlement/#comments (Jan. 7, 2010) (explaining LeGuin's objections to the Google settlement, supplemented with comments by authors who are joining her opposition to the settlement).

meaningful constraints on the pricing of institutional subscriptions.[39]

Some libraries, researchers, and civil liberties groups expressed support for the GBS settlement,[40] but the tide turned against the PSA after the U.S. Department of Justice filed a Statement of Interest in mid-September recommending against approval of the PSA.[41] The DOJ also questioned whether the PSA complied with the strictures of Rule 23 of the Federal Rules of Civil Procedure, which establishes standards about adequacy of representation of absent class members, fair notice of the settlement terms, and the like.[42] The DOJ also regarded numerous provisions to be inconsistent with the antitrust laws.[43]

Shortly after the DOJ's submission, lawyers representing the author and publisher subclasses asked for a postponement of the fairness hearing to give them a chance to produce a revised settlement agreement that would respond to DOJ and other objections.[44]

III.   ACADEMIC AUTHOR OBJECTIONS TO THE PASA

On November 13th, the parties filed the PASA with the court.[45] Supplemental notice of the amended agreement was ordered, and the fairness hearing was reset for February 18, 2010.[46] Class members were given a new chance to opt out, object, or otherwise file comments on the PASA by January 28th.[47] One of the approximately sixty documents filed by that deadline was a letter submitted on behalf of 150 academic authors whose objections to the PASA are set forth in the remainder of

---

39. Letter from Pamela Samuelson, Richard M. Sherman Professor of Law, University of California on Behalf of Academic Authors, to Judge Denny Chin, Authors Guild, Inc. v. Google Inc., No. 05-CV-08136 (S.D.N.Y. Sept. 3, 2009), *available at* http://thepublicindex.org/docs/letters/samuelson.pdf [hereinafter Academic Objection Letter].

40. *See*, *e.g.*, Letter from Members of the Stanford Univ. Computer Sci. Dep't., to Judge Denny Chin, Authors Guild, Inc. v. Google Inc., No. 05-CV-08136 (S.D.N.Y. Sept. 3, 2009) (on file with author); Letter from Paul Courant, Univ. Librarian & Dean of Libraries, Univ. of Mich., to Judge Denny Chin, Authors Guild, Inc. v. Google Inc., No. 05-CV-08136 (S.D.N.Y. Sept. 10, 2009), *available at* http://thepublicindex.org/docs/letters/Courant.pdf.

41. *See* Statement of Interest by the U.S. Dep't. of Justice Regarding the Proposed Settlement, Authors Guild, Inc. v. Google Inc., No. 05-CV-08136 (S.D.N.Y. Sept. 18, 2009), http://thepublicindex.org/docs/letters/usa.pdf [hereinafter DOJ Statement].

42. *Id*. at 4-5; *see also* FED. R. CIV. P. 23.

43. DOJ Statement, *supra* note 41, at 16–17.

44. Authors Guild, Inc. v. Google Inc., No. 05-CV-08136 (S.D.N.Y. Sept. 24, 2009) (order adjourning fairness hearing), *available at* http://thepublicindex.org/docs/case_order/20090924.pdf.

45. *See* PASA, *supra* note 2.

46. Authors Guild, Inc. v. Google Inc., No. 05-CV-08136 (S.D.N.Y. Nov. 19, 2009), http://thepublicindex.org/docs/amended_settlement/order_granting_prelim_approval.pdf (order granting preliminary approval of amended settlement for purposes of authorizing supplemental notice to class members).

47. *Id*.

this article.[48]

This letter supplemented one submitted to the court on September 3, 2009, on behalf of sixty-five academic authors and researchers, which stated numerous objections to the proposed settlement.[49] Among other things, the earlier letter expressed concerns about the lack of meaningful constraints on price increases for the ISD, the de facto monopoly that Google would obtain to orphan books, which posed risks of excessive pricing of the ISD, inadequate user privacy protections, and excessive restrictions on non-consumptive research.

This supplemental academic author objection letter began by observing that Google's enterprise should not be conceived of as a library.[50] It is instead a complex and large-scale commercial enterprise in which Google—and Google alone—will obtain a license to sell millions of books for decades to come. If the PASA is approved, millions of rights holders will be forced to join the BRR or the Google Partner Program to exercise any control over Google's use of their books.

The remainder of this Article is derived from the supplemental academic author objection letter. Section A explains that the interests of academic authors were not adequately represented during the negotiations that yielded the PSA and the PASA. Section B discusses objections to provisions in the PASA concerning the collection and disposition of revenues derived from "orphan" and other unclaimed books. Section C discusses an amendment to the proposed settlement that is susceptible to an interpretation that would disadvantage academic authors of what the PSA and PASA designate as "inserts" (e.g., book chapters). Section D objects to PASA amendments omitting reference to a termination agreement negotiated by the litigants. If there is a termination agreement that is still in force, it ought to be disclosed to members of the class, as well as to the Court. If not, the litigants should explicitly abjure it.

Section E raises concerns about whether the parties' professed

---

48. Letter from Pamela Samuelson, Richard M. Sherman Professor of Law, Univ. of Cal., to Judge Denny Chin, Authors Guild, Inc. v. Google Inc., No. 05-CV-08136 (S.D.N.Y. Jan. 27, 2010), *available at* http://thepublicindex.org/docs/amended_settlement/ Samuelson_supplemental_objection.pdf [hereinafter Supplemental Academic Objection Letter] (addressing the supplemental academic author objections).

49. Academic Objection Letter, *supra* note 39. For a more complete discussion of the possible benefits and risks of the proposed GBS settlement, see Pamela Samuelson, *Google Book Search and the Future of Books in Cyberspace*, 95 MINN. L. REV. (forthcoming 2010), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1535067.

50. *See* Pamela Samuelson, *Google Books Is Not a Library*, HUFFINGTON POST, Oct. 13, 2009, http://www.huffingtonpost.com/pamela-samuelson/google-books-is-not-a-lib_b_ 317518.html. Nor will GBS be "universal," given the narrowing of the class, the opt-out, exclusion and removal requests, and directions from some rights holders not to scan their books. *See also* Lawrence Lessig, *For the Love of Culture*, THE NEW REPUBLIC.COM, Feb. 4, 2010, http://www.tnr.com/article/the-love-culture.

aspirations for GBS to be a universal digital library are being undermined by their own withdrawals of books from the regime the settlement would establish, as well as by actions of other rights holders who have opted out of the settlement because they find its terms unacceptable. Information has come to light since early September 2009 that undermines the confidence of academic authors that the settlement will bring about the public benefits the litigants say they intend.

Section F offers a list of changes that should be made to the PASA to make the settlement fair and adequate as to academic authors. Even with these modifications, however, serious questions remain about whether the class defined in the PASA can be certified consistent with Rule 23, whether the settlement is otherwise compliant with Rule 23, whether the settlement is consistent with the antitrust laws, and whether approval of this settlement is an appropriate exercise of judicial power. These questions have been addressed in numerous other submissions,[51] and while the supplemental academic author objection letter does not discuss them, it joins the misgivings that others have expressed.

While approval of the GBS settlement would unquestionably bring about some public benefits, chiefly by providing significantly improved access to books, it is important for the court to recognize and give appropriate weight to the substantial risks that the proposed settlement poses. These risks can be avoided or ameliorated in one of two ways: either by rejecting the settlement altogether or by conditioning its approval on the parties' willingness to make changes to the PASA that address meritorious objections.

A.   The Authors Guild Failed to Adequately Represent the Interests of Academic Authors

The litigants who spent two and a half years negotiating the initial PSA and now the PASA have interests and preferences that dramatically diverge from those of many rights holders who were not at the negotiating table, including academic authors.[52] It is thus unsurprising that hundreds of authors and other rights holders have objected to the

---

51. *See*, *e.g.*, Gant Objection, *supra* note 15; Statement of Interest by the U.S. Dep't. of Justice Regarding the Proposed Amended Settlement, Authors Guild, Inc. v. Google Inc., No. 05-CV-8136 (S.D.N.Y. Feb. 4, 2009), *available at* http://thepublicindex.org/docs/amended_settlement/usa.pdf [hereinafter Second DOJ Statement].

52. Nor is it surprising that several public interest organizations have expressed opposition to the settlement. S*ee*, *e.g.*, Brief for Consumer Watchdog as Amici Curiae Opposing Settlement, Authors Guild, Inc. v. Google Inc., No. 05-CV-8136 (S.D.N.Y. Sept. 7, 2009), *available at* http://www.jdsupra.com/post/documentViewer.aspx?fid=d2009bc1-6a12-40b5-b92d-6a6965dddbb1; Brief for Public Knowledge as Amici Curiae Opposing Settlement, Authors Guild, Inc. v. Google Inc., No. 05-CV-8136 (S.D.N.Y. Sept. 8, 2009), http://www.publicknowledge.org/pdf/pk-gbs-amicus-20090908.pdf.

settlement and even more have opted out.[53]

The supplemental academic author letter reaffirmed the September 3rd academic author objections to the PSA because the PASA does not adequately respond to objections set forth in that letter.[54] The supplemental letter stated some new objections because certain amendments to the PASA are contrary to the interests of academic authors, members of the Author Subclass.

The academic author objections are rooted in the same fundamental flaw in the GBS settlement process: the Authors Guild and the named author plaintiffs did not fairly and adequately represent the interests of academic authors in negotiating either the PSA or the PASA.[55] Simply put, the Authors Guild and its members do not share the interests, professional commitments, or values of academic authors.[56] Only a small fraction of Authors Guild members write scholarly books of the sort likely to be found in major research libraries.[57] Nor does the AAP share

---

53. *See*, *e.g.*, Bloom Objections, *supra* note 37; Letter from Science Fiction & Fantasy Writers of Am., Inc. et al., Authors Guild, Inc. v. Google Inc., No. 05-CV-8136 (S.D.N.Y. Jan. 27, 2009) (letter on file with author). The Plaintiffs report that 6800 rights holders opted out of the PASA. *See* Memorandum Supporting Plaintiffs' Motion for Final Settlement at 37, Authors Guild, Inc. v. Google Inc., No. 05-CV-8136 (S.D.N.Y. Feb. 11, 2010) (Memorandum on file with author).

54. An exception is a provision of the PASA that now expressly recognizes that some rights holders may want to make books and inserts available on an open access basis, such as by Creative Commons licenses. *See* PASA, *supra* note 2, § 4.2 (a)(i). However, there is still reason to be concerned that the Book Rights Registry (BRR) will not welcome and might even discourage academic authors' exercise of this option because the BRR will collect no revenues from Google if books are available on open access terms. BRR will find it difficult to have sufficient revenues to sustain its operations if academic authors exercise this option with any frequency.

55. Scott Gant has made a set of vigorous objections to the PSA as to class action notice deficiencies and other Rule 23 problems with the PSA. *See* Gant Objection, *supra* note 15; *see also* Supplemental Objection of Scott E. Gant to Proposed Amended Settlement Agreement and to Certification of the Class, Authors Guild, Inc. v. Google Inc., No. 05-CV-8136 (S.D.N.Y. Jan. 26, 2010), *available at* http://thepublicindex.org/docs/amended_settlement/ Gant_Objection.pdf. The Plaintiffs in the Authors Guild case disagree. *See* Plaintiffs' Supplemental Memorandum Responding to Specific Objections, Authors Guild, Inc. v. Google Inc., No. 05-CV-8136 (S.D.N.Y. Feb. 11, 2010), *available at* http://thepublicindex.org/docs/amended_settlement/Plaintiffs_Supplemental_Memorandum_ of_Law.pdf [hereinafter Supplemental Memorandum].

56. The Authors Guild, for instance, generally limits its membership to authors who have contracts with established American publishers that include a "royalty clause and a significant advance." *See* Guild Membership Eligibility, http://www.authorsguild.org/join/eligiblity.html (last visited Feb. 20, 2010). Few academic authors would meet these criteria. The interests of professional writer-members of the Authors Guild in maximizing revenues are reflected in the PSA and the PASA. An example is PASA, *supra* note 2, § 4.8(a)(ii) that requires paying fees for pages printed out at public access terminals. Academic authors would regard printing a few pages from an out-of-print book to be fair use. *See* Academic Objection Letter, *supra* note 39, at 2–7.

57. The Authors Guild website links to approximately 3000 of their members' websites. *See* Member Websites, http:www/authorsguild.org/news/member_websites/a.html (last visited

the commitments and values of scholarly authors, as is evident from its
recent efforts to thwart open access policies for government-funded
academic research,[58] policies which scholars generally support.[59]
Academic authors, almost by definition, are committed to maximizing
access to knowledge. The Guild and the AAP, by contrast, are
institutionally committed to maximizing profits.

Nor does the Guild have the same legal perspective as most
academic authors on the central issue in litigation in the *Authors Guild*
case, to wit, whether scanning books in order to index their contents and
make snippets available constitutes copyright infringement.[60] Academic
authors are more likely than Guild members to consider scanning books
for information-locating purposes to be a non-infringing use because
indexes and snippets advance scholarly research and improve access to
knowledge, especially when, as with GBS, searches yield links to libraries
from which the relevant books can be obtained.[61]

Rule 23 of the Federal Rules of Civil Procedure requires courts to
consider whether there is sufficient commonality of interest and
typicality of claims among those who are within a putative class before
certifying it or approving a class-binding settlement.[62] While this Article
focuses on academic author objections to the PASA, there are other

---

Mar. 15, 2010). A review of those websites reveals that slightly over 10 percent of these Guild
members have written books of the sort likely to be found in major research libraries whose
collections Google has scanned. So far as one can discern from these websites, the Guild's
members primarily write works aimed at non-scholarly audiences. They write, for instance,
romance novels, erotica, travelogues, magazine articles, and magic books. They may be
accomplished writers, but they are unrepresentative of the interests of academic authors whose
books constitute most of the GBS corpus.

58. Ass'n of Research Libraries, Issue Brief: AAP PR Campaign Against Open Access
and Public Access to Federally Funded Research (Feb. 2007), http://www.arl.org/bm~doc/
issue-brief-aap-pr.pdf.

59. The negotiating party whose interests most closely align with the values of scholarly
communities is, ironically enough, Google. However, that firm cannot be an adequate
representative of the interests of scholarly authors in negotiating a class action settlement.

60. This issue necessarily forms the basis on which any settlement must be based. *See*
Second DOJ Statement, *supra* note 51, at 7 (noting the serious questions of validity that arise
when parties try to resolve future claims well beyond the facts of the complaint in the absence
of class members).

61. Most academic commentary on Google's fair use defense supports it. *See, e.g.,*
Hannibal Travis, *Google Book Search and Fair Use: iTunes for Authors or Napster for Books?*, 61 U.
MIAMI L. REV. 87 (2006) (arguing that scanning books to index them is fair use); Matthew
Sag, *The Google Book Settlement and the Fair Use Counterfactual*, N.Y.U.L. Rev. (forthcoming)
(manuscript at 11–25), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=
1437812 (comparing the proposed GBS settlement to fair use outcome); *see also* Frank
Pasquale, *Copyright in an Era of Information Overload*, 60 VAND. L. REV. 135 (2007)
(discussing the need for broad fair use for search engines to help people find information). The
DOJ recognizes that Google's pre-settlement conduct was carefully kept within plausible fair
use bounds. Second DOJ Statement, *supra* note 51, at 7.

62. FED. R. CIV. P. 23(a); Teamsters Local 445 Freight Div. Pension Fund v.
Bombardier, Inc., 546 F.3d 196, 201–02 (2d Cir. 2008).

rights holders who believe the Guild and the AAP had interests quite different from and/or in conflict with theirs. Indeed, when one considers the diverse complaints about the settlement expressed in the hundreds of objections already filed in this matter, it is natural to question whether the Rule 23 standards have been and can be met for a class consisting of all persons owning U.S. copyright interest in one or more books or inserts published in the United States, the United Kingdom, Canada, or Australia.

That said, the perspectives of academic authors on the PSA and the PASA should be given particular weight in the court's determination about whether the PASA is fair and worthy of approval. The overwhelming majority of books in the GBS corpus are from the collections of major research libraries, such as the University of Michigan and the University of California.[63] Not surprisingly, a large majority of those books were written by scholars for scholarly audiences.[64] Academic authors also far outnumber the members of the Authors Guild. There are more than a million full-time academics working at colleges and universities in the United States,[65] for many of whom publication of books, book chapters, and the like is a career requirement, as well as a source of deep satisfaction. The books and inserts written by academic authors are also of the sort likely to be found in the collections of major research libraries.

Of course, academic authors sometimes assign their copyrights to publishers of their books, but this does not necessarily change the calculus. Rights to authorize electronic editions of these books may well be new and unforeseen uses of their works, rights that seem to reside with authors under *Random House, Inc. v. Rosetta Books L.L.C.*[66] This case held that authors of literary works have the right to authorize third parties to make e-books of them, even though they had assigned rights to publishers to make and distribute print versions.[67] Many publishing

---

63. *See, e.g.*, *Competition and Commerce in Digital Books: Hearing Before the H. Comm. on the Judiciary*, 111th Cong. 1–3 (2009) (Prepared Statement of David Drummond, Senior Vice President of Corporate Development and Chief Legal Officer of Google, Inc.), *available at* http://judiciary.house.gov/hearings/printers/111th/111-31_51994.pdf [hereinafter *Hearing*] (estimating that 2 million of the 10 million books then in the GBS corpus are books in the Google Partner Program, while 8 million were obtained from research library partners).

64. *See, e.g.*, Brian Lavoie & Lorcan Dempsey, *Beyond 1923: Characteristics of Potentially In-copyright Print Books in Library Collections*, D-LIB MAG., Nov.-Dec. 2009, (reporting that 78% of the non-fiction books in the collections of three of Google's research library partners are scholarly books and that non-fiction books constitute more than 90% of library collections).

65. *See* BUREAU OF LABOR STATISTICS, U.S. DEPT. OF LABOR, OCCUPATIONAL OUTLOOK HANDBOOK, 2010-11 (2009), http://www.bls.gov/oco/ocos066.htm (finding nearly 1.7 million post-secondary teaching positions in 2008).

66. 283 F.3d 490 (2d Cir. 2002).

67. *Id.* at 491. The court considered the widely used contractual language in book

contracts also provide that copyrights revert to authors when their books go out of print (which millions of books in the GBS corpus are). For these reasons, academic authors likely hold the relevant copyright interest in many books and inserts in the GBS corpus.

B.   Objections to the Unclaimed Work Provisions of the PASA

The PSA would have created a blatant conflict of interest between those class members who had registered their books with the BRR, as the Guild expects its members to do, and those who had not.[68] Funds from unclaimed books would have been held in escrow for five years, after which, revenues from Google's commercialization of them would have been paid out to BRR-registered rights holders.[69] This would not only have given BRR-registrants a windfall from books in which they owned no rights, but it also would have created structural disincentives for BRR to search for owners of unclaimed books. Not surprisingly, the Department of Justice objected to this as inconsistent with Rule 23.[70]

Amendments in the PASA seemingly acknowledge the existence of this intra-class conflict, but do not resolve it in a manner that is fair, reasonable, or adequate to class members or consistent with the public interest.

The PASA calls for the appointment of an unclaimed work

---

publishing contracts—"to publish, print, and sell their copyrighted works 'in book form'"—as a limited grant, not a grant of all copyright interests. *Id.* It is worth noting that the Authors Guild submitted an amicus curiae brief in support of Rosetta in that case, while the AAP submitted one in support of Random House. Hidden underneath the surface of the proposed GBS settlement is a set of compromises that address serious conflicts that exist between authors and publishers over rights to control and compensation for e-book publications. *See* PASA, *supra* note 2, Att. A. The conflicts are reflected in testimony of Paul Aiken, Executive Director of the Authors Guild, to Congress:

> One of the reasons this thing [the PSA] took 30 months to negotiate was that we weren't just negotiating with Google. It was authors negotiating with publishers, and we rarely see eye to eye. So we had months and months and months of negotiations, trying to work out our differences.

Hearing, *supra* note 63, at 143. Had Random House tried to resolve this e-book rights issue by bringing a class action lawsuit on behalf of a class of publishers against a class of authors in order to negotiate a settlement along the lines of Attachment A, the case would have been dismissed because the dispute would have involved both varying contract language and different state laws so that Rule 23 requirements could not have been satisfied. Attachment A takes advantage of the settlement on other issues as to which Google is the antagonist to bring about a new allocation of copyright ownership, licensing, and reversion rights and procedures that, but for the settlement, could only have been accomplished through legislative action.

68. *See* DOJ Statement, *supra* note 41, at 9.

69. PSA, *supra* note 16, § 6.2(a).

70. DOJ Statement, *supra* note 41, at 9–10. The initial willingness of the class representatives to negotiate such a provision reflects considerable insensitivity to the interests of unclaimed work rights holders. It should not have required an objection from DOJ to get fair treatment for these rights holders.

fiduciary (UWF) to make certain decisions about Google's exploitation of unclaimed works and to act as a gatekeeper for funds owed to rights holders of unclaimed works.[71] It also directs that funds generated by Google's commercialization of unclaimed works should be held in escrow for ten years, that these funds are to be used to search for rights holders, and that after ten years, unclaimed work funds can be paid out to charities or otherwise allocated in a manner consistent with state laws.[72]

These provisions are objectionable for several reasons. For one thing, there are no meaningful guarantees of independence for this so-called fiduciary.[73] Nor are there sufficient criteria for how he/she should perform a fiduciary role for rights holders in unclaimed books. The UWF is, for example, to be chosen by a supermajority of the BRR Board,[74] and will apparently be housed in the BRR offices. The BRR, not the fiduciary, will hold onto the unclaimed funds; after five years, the BRR is authorized to use a significant portion of the unclaimed work funds to search for rights holders, although this is subject to the UWF's approval.[75]

Second, the powers that the PASA grants to the UWF are in some respects too limited and in at least one respect too broad. The UWF can, for instance, choose to change the default setting for an unclaimed in-print book from "no display" to "display" (that is, from a setting that does not allow Google to commercialize the books to one which does allow commercialization), but not the reverse.[76] The UWF also has the power to approve changes in pricing bins for unclaimed books available through the consumer purchase model,[77] but seemingly no power to set prices for individual unclaimed books nor to provide input about price-setting institutional subscriptions. This seems strange because all or virtually all of the unclaimed books will be in the ISD and revenues derived from the ISD are likely to be substantial. The UWF also has the power to disapprove of Google's plan to discount prices of unclaimed books,[78] but

---

71. PASA, *supra* note 2, § 6.2(b)(iii). The only qualification PASA provides for this position is a negative one: he/she cannot be a book author or publisher. *Id.*

72. *Id.* §§ 6.2(b)(iv), 6.3(a).

73. *See* Second DOJ Statement, *supra* note 51, at 13 (questioning the independence of the UWF).

74. PASA, *supra* note 2, § 6.2(b)(iii).

75. *Id.* § 6.3(a)(i).

76. *Id.* §§ 6.2(b)(iii), 3.2(e)(i). The UWF would have structural incentives to exercise the power to switch the default for unclaimed in-print books from "no display" to "display uses" in order to generate revenues that could be used to search for their rights holders to encourage them to claim the books.

77. *Id.* § 4.2(c)(i).

78. *Id.* § 4.5(b)(ii). There may be little incentive for the UWF to agree to discounts as it would reduce the revenues over which the UWF would have some control. BRR may also not want unclaimed works to be discounted, as these books will compete with those of registered rights holders.

apparently lacks the power to recommend discounts.

Of particular importance to academic authors, the UWF lacks power to make unclaimed books available on an open access basis.[79] While divining the preferences of all unclaimed rights holders may be challenging, most unclaimed books in the GBS corpus are likely to be books written by scholars for scholars. Most such authors would prefer that their out-of-print books be available on an open access basis, especially insofar as Google is making these books available to institutions of higher learning.[80] The UWF should have the authority to make books available on an open access basis.

One highly objectionable power the PASA grants to the UWF is the power to authorize Google to alter the texts of unclaimed books.[81] Academic authors can imagine no circumstance under which changes to the historical record embodied in books from major research libraries would be justifiable. Granting the UWF the power to authorize alteration of texts poses serious risks of censorship.

Third, if books remain unclaimed after ten years during which the UWF and BRR have made a reasonably diligent search to find their rights holders, the books should be deemed to be "orphans," a term which is typically defined to include works whose rights holders could not be found after a reasonably diligent search.[82] The PASA should contain a provision requiring the UWF to disclose which unclaimed books it has concluded are, in fact, orphans so that others could decide whether to make them available.[83]

Fourth, the PASA would intrude upon Congressional prerogatives regarding orphan works legislation in a post-settlement world. The PASA gives the UWF authority to license copyright interests in unclaimed books to third parties "to the extent permitted by law."[84] Existing law does not allow *any* licensing of in-copyright books to third parties without the rights holders' permission. The only way that the UWF could get the legal authority to issue such licenses would be from

---

79. Nor apparently can the UWF direct Google to exclude unclaimed books from any newly approved revenue models or to remove them from the GBS corpus. Most of the UWF's powers are directed to revenue-enhancement.

80. *See* Letter from the Academic Council, Univ. of Cal., *supra* note 33, at 4–5.

81. PASA, *supra* note 2, § 3.10(c)(i).

82. U.S. COPYRIGHT OFFICE, REPORT ON ORPHAN WORKS 1 (2006), http://www.copyright.gov/orphan/orphan-report.pdf.

83. The settlement agreement should also require the UWF, as well as the BRR and Google, to make publicly available any information they possess about books they discover to be in the public domain (owing, for instance, to the author's failure to renew copyright). These actors may have financial incentives to withhold this information because they may benefit from Google's commercialization of public domain books. The PASA even allows registered rights holders to share in revenues mistakenly earned by Google from the sale or licensing of public domain books. PASA, *supra* note 2, § 6.3(b).

84. *Id.* § 6.2(b)(i).

Congress, presumably through the passage of orphan works legislation.

By establishing a private escrow regime for collecting and distributing revenues that Google may earn from its commercialization of orphan books, the PASA seems to be setting up the UWF as an intermediary for the licensing of orphan books to third parties. It also establishes a regime through which revenues from these books are to be distributed (e.g., to the UWF's favorite charities). The UWF would have a financial stake in the continuation and extension of the escrow regime and in persuading Congress that escrowing was the best solution to the problem posed by unclaimed works.

It is, however, for Congress to decide what should be done with orphan works, not for those who negotiated the PSA and PASA, nor for the courts. A substantial restructuring of rights under copyright law is the constitutionally mandated domain of the U.S. Congress.[85] The orphan works legislation that Congress has considered in recent years has not adopted the escrow model.[86] Indeed, these bills are more closely modeled on the recommendations of the U.S. Copyright Office, which concluded that orphan works should be freely usable if rights holders cannot be found.[87]

The treatment of orphan books is no small matter. No one really knows how many books will ultimately be unclaimed in the aftermath of a GBS settlement, although one estimate by a disinterested party suggests there may be up to five million.[88] Google spokesmen have tended to offer fairly conservative estimates about the proportion of books in the GBS corpus that will be orphans. David Drummond, chief legal officer of Google, estimated in his testimony before Congress that about 20% of the out-of-print books in GBS would likely be orphans.[89] With approximately 8 million such books now in the GBS corpus, Drummond's estimate would yield 1.6 million orphan books; if GBS grows to 50 million books, as some expect,[90] and the proportion of out-of-print and orphan books remained stable, that would mean that about

---

85. Eldred v. Ashcroft, 537 U.S. 186, 222 (2003).

86. *See*, *e.g.,* Shawn Bently Orphan Works Act of 2008, S. 2913, 110th Cong. (2d Sess. 2008); Public Domain Enhancement Act, H.R. 2408, 109th Cong. (1st Sess. 2005).

87. *See* REPORT ON ORPHAN WORKS, *supra* note 82, at 8. The Office recommended that if a rights holder later came forward to claim the work, the person who reasonably believed the work was an orphan might continue the use for future compensation. *Id.* at 115.

88. Statement of William Morris, Endeavor Entertainment (Aug. 2009), http://thepublicindex.org/docs/commentary/wme.pdf [hereinafter Morris Statement] (noting a Financial Times estimate that between 2.8 and 5 million of the 32 million books protected by copyright in the United States are likely to be orphans).

89. Hearing, *supra* note 63, at 12.

90. *See*, *e.g.,* Letter from Paul Courant, *supra* note 40, at 1 (estimating that Google will scan 50 million unique books for GBS).

7.5 million books would be orphans.[91]

The proportion of orphan books may, however, be higher than Mr. Drummond estimated, perhaps even much higher. "Older" books, especially books published before the 1980s,[92] are especially likely to be unclaimed. In the thirty years or more since the publication of these books, the publishers may have gone out of business, their authors may have passed away, and their heirs may be ignorant about rights in their forebearers' books or too numerous or dispersed to track down. Older book authors may also be suffering from debilitating states or otherwise uninterested in overtures from the BRR.

Orphan books will likely be sold through the consumer purchase model at prices ranging from $1.99 to $29.99.[93] The goal of the PASA pricing algorithm is to maximize revenues for each book.[94] Google also plans to license these books as part of the ISD to thousands of universities, public libraries, and other entities. ISD subscription prices are supposed to approximate market returns for a multi-million-book database.[95] There is reason to worry that prices for the ISD will rise over time to astronomical levels.[96]

The PASA provides that after 10 years of collecting profit-maximizing revenues for orphan books, the UWF would become a philanthropist,[97] distributing these funds to charities in various countries that promote literacy, freedom of expression, and education. The PASA also authorizes the UWF to continue to collect funds for orphan books for the remainder of their copyright terms, and to continue paying orphan funds to these charities. The eleemosynary impulse underlying these provisions may be admirable, but the PASA takes the wrong approach to making orphan books available.

While Congress is the proper governing body for decisions about what to do about orphan works, academic authors are likely to believe that if books are true orphans, they should be freely available for use by all, including non-profit institutions such as the colleges and universities with which we are affiliated. Treating unclaimed orphan books as public domain works would be more consistent with the utilitarian purpose of

---

91. There is reason to believe that the proportion of orphans and of out-of-print books would be substantially higher as the number of books in the GBS corpus approaches 50 million, for there is a limited number of in-print books, and Google may be scanning most of them through its partner program.

92. Roughly half of the books in U.S. library collections were published before 1977 and one-third before 1964. Lavoie & Dempsey, *supra* note 64. Moreover, research library collections tend to include a higher percentage of older books. *Id.*

93. PASA, *supra* note 2, § 4.2(c)(i) (setting percentages for algorithmic pricing bins).

94. *Id.* § 4.2(c)(ii)(2).

95. *Id.* § 4.1.

96. Academic Objection Letter, *supra* note 39, at 3–5.

97. PASA, *supra* note 2, § 6.3(a)(i)(3).

U.S. copyright law, insofar as unclaimed works lack an author or publisher in need of exclusive rights to recoup investments in creating and disseminating these works.[98]

In contradiction of this utilitarian purpose, the PASA contemplates that the UWF will continue to collect funds from Google for its commercial exploitations of orphan books until their copyrights expire and that these funds should be distributed to charities selected by the UWF. This treatment for orphan works is objectionable.

Finally, it is worth noting that the economics of digital publishing and digital networks have made it possible for unclaimed/orphan books to draw readers online, even though their publishers could not justify keeping the books in print. A high quality digital copy of a print book can be made for $30; reproduction and distribution of digital copies of the same book are essentially costless. Digital networks make it easier for people with niche interests to communicate about their preferences, so books written long ago on seemingly esoteric subjects may reach audiences in the digital world that would be economically unviable in the print realm. The public interest would be better served by making these books widely available to all, either as public domain works or through licenses to other firms so that the public's interest in access to these books would be subject to the rigors of competition and not to Google's de facto monopoly.

C.   *The Apparent Exclusion of Unregistered Inserts Is Unfair, and the Exclusion of Unregistered Books May Be Unfair Under a Recent Supreme Court Case*

Many academic authors have contributed chapters for edited volumes or written book forewords, works of the sort that fall within the PASA's definition of "inserts."[99] Under the PSA, academic authors had reason to believe that they were in the settlement class as to these inserts as long as the books in which their writings appeared had been registered with the U.S. Copyright Office.[100] The PASA has amended the

---

98. It is disheartening that Google Books sometimes provides links to sites where books can be purchased, but not to sites where the same books are available for free. An example is JAMES GOSLING & BILL JOY, THE JAVA LANGUAGE SPECIFICATION, a free copy of which is available at http://java.sun.com/docs/books/jls/. Google Books points only to sites where copies of this book can be purchased for prices ranging from $1.99 to $999.99. *See* Google Books, The Java Language Specification, http://books.google.com/books?id=Ww1B9O_yVGsC&sitesec=buy&source=gbs_navlinks_s (last visited Mar. 17, 2010). This book is widely used by Java programmers.

99. PASA, *supra* note 2, § 1.75 (defining "insert").

100. PSA, *supra* note 16, § 1.72. This definition suggested that inserts were within the settlement if the book in which they appeared had been registered with the U.S. Copyright Office.

definition of inserts in a manner that can be construed to exclude inserts that have not been separately registered with the U.S. Copyright Office.[101] If this interpretation of the PASA is correct, academic authors object to this change.

Newly published books are commonly registered with the U.S. Copyright Office because of certain benefits of registration.[102] Chapters in edited volumes and other individually authored contributions to books are much less likely to be registered separately from the book, for there is little perceived need to do so. If the book as a whole is registered and infringed, authors of chapters in an edited volume may expect that the book's copyright owner would be able to vindicate the interests of contributing authors. Should the need for separate registration arise—for example, because someone republished one chapter of a book without permission—it is a simple matter for its author to register the copyright at a later time. The Copyright Act of 1976 makes clear that copyright protection is available to authors from the moment their works are first fixed in a tangible medium.[103] Copyright protection does not depend on registration under current law.[104]

The GBS litigants may have restricted the class of rights holders eligible to participate in (or opt out of) the settlement to those who had registered their books with the Copyright Office in deference to a Second Circuit Court of Appeals decision, *In re Literary Works in Electronic Databases Litigation*.[105] That case ruled that unregistered rights holders were ineligible to participate in the settlement of a class action lawsuit alleging copyright infringement because U.S. copyright law requires registration as a precondition of suing infringers of U.S. works.[106]

Restricting the GBS settlement class to registered U.S. rights holders may have been understandable because of the Second Circuit's ruling. However, the Supreme Court has reversed that ruling in *Reed Elsevier v. Muschnick*.[107] The reversal would seem to make it possible for owners of copyrights in unregistered books and inserts to participate in class action settlements of copyright lawsuits. Indeed, it may now be unreasonable to exclude them. The PASA defines the settlement class in

---

101. *See*, *e.g.*, Posting of Kenneth Crews to Columbia University Libraries, Copyright Advisory Office Website, http://copyright.columbia.edu/copyright/2009/12/17/google-books-dude-wherere-my-inserts/ (Dec. 17, 2009).

102. 17 U.S.C. § 412 (2006). Prompt registration allows owners to be eligible to be awarded attorney fees and statutory damages. *Id*.

103. *Id*. § 102(a).

104. *Id*. § 408(a).

105. 509 F.3d 116 (2d Cir. 2007), *rev'd*, *sub nom*. Reed Elsevier, Inc. v. Muchnick, 130 S.Ct. 1237 (2009).

106. 17 U.S.C. § 411(a) (2006).

107. Reed Elsevier, Inc. v. Muchnick, 130 S.Ct. 1237, 1249 (2009).

a gerrymandered manner so that books owned by Australian, Canadian, and UK rights holders automatically are within the settlement, but those owned by American rights holders are ineligible unless registered.[108] There is no principled basis for this definition of the settlement class now that the Supreme Court has reversed the Second Circuit's ruling.

The academic author objection letter urged the court presiding over the GBS fairness hearing to withhold its decision about whether to approve the settlement until the Supreme Court has resolved this issue. Now that the Supreme Court has decided that unregistered rights holders can participate in copyright class action settlements, the court should ask the litigants to renegotiate the PASA to address the unregistered rights holders issue.[109] Indeed, the lawyers for the Author Subclass should *sua sponte* make a request for reconsideration of the settlement terms in view of the *Reed Elsevier* ruling. The court should refuse to approve the settlement until the class is redefined, as it would be unfair to deny unregistered copyright owners the ability to decide whether they wish to participate in the PASA (or opt out) now that the *Reed Elsevier* decision seemingly allows their inclusion.

It is unclear what uses Google plans to make of inserts that have not been separately registered with the Copyright Office, assuming that these works are not within the settlement and their rights holders are ineligible for compensation for Google's uses of them. The same question arises as to books that Google has scanned that do not fall within the PASA's definition of "book" (i.e., unregistered U.S. books, such as doctoral dissertations on the shelves of many research libraries, and books by foreign rights holders that are no longer within the settlement). The litigants should clarify this matter.

While many academic authors may be pleased for their inserts to be freely available through a digital database such as GBS, they would prefer to have the right to control the dedication of their works to the public domain or to make works available under a Creative Commons license rather than being treated as though they have no right to control Google's commercialization of their works merely because they didn't separately register copyright claims in them.

Finally, it seems that the Authors Guild did nothing to encourage book or insert rights holders to register their claims of copyright before January 5, 2009, the cut-off date for book inclusion in the settlement class. Because the notice to class members did not commence until after the cut-off date, there was no opportunity for those who had not already

---

108. PASA, *supra* note 2, § 1.19.

109. Expansion of the class to unregistered U.S. rights holders would also seem to require a new round of notice to rights holders since the first round of notice made no effort to reach them.

registered their works to do so in order to participate in the settlement. As explained above, insert authors had reason to believe that their inserts would be within the settlement as long as the books in which the works appeared were registered. Any change in the PASA that alters academic author rights in inserts is objectionable.

D.   *The Court Must Require Disclosure of Any Termination Agreement That Pertains to the GBS Settlement*

Article XVI of the PSA referred to the existence of a supplemental agreement negotiated by the litigants to terminate the PSA if certain unnamed conditions were met. The PSA indicated that the terms of that supplemental agreement were confidential and that the parties did not intend to file it with the Court:

> Google, the Author Sub-Class, and the Publisher Sub-Class each will have the right but not the obligation to terminate this Settlement Agreement if the withdrawal conditions set forth in the Supplemental Agreement Regarding Right to Terminate between Plaintiffs and Google have been met. Any decision by Google, the Author Sub-Class or the Publisher Sub-Class to terminate this Settlement Agreement pursuant to this Article XVI (Right to Terminate Agreement) will be in accordance with the procedures set forth in the Supplemental Agreement Regarding Right to Terminate. The Supplemental Agreement Regarding Right to Terminate is confidential between Plaintiffs and Google, and will not be filed with the Court except as provided therein.[110]

Rule 23(e)(3) of the Federal Rules of Civil Procedure requires disclosure of any agreement among the litigants made in connection with a proposed settlement of a class action lawsuit.[111] It would seem impossible for the court to determine if the PASA is fair, reasonable, and adequate without having access to the whole agreement, which necessarily includes an agreement setting forth termination conditions and consequences. It is unacceptable that a separate termination agreement, which so deeply affects the interests of class members, would not be revealed to them, or to the court.

The existence of a termination agreement is especially important to academic authors because an important reason many are staying in the settlement and not opting out is because they expect their books and inserts, as well as those of other scholars, to be available through GBS for decades to come. Academic authors also care about their institutions

---

110. PSA, *supra* note 16, art. XVI.
111. FED. R. CIV. P. 23(e)(3).

having the access to books in GBS through the ISD. That the settlement agreement could terminate at some point in time without academic authors knowing on what basis this could occur is deeply troubling.

The PASA has "intentionally omitted" Article XVI.[112] It is not clear what this means. If the termination agreement referred to in the PSA is still in existence and in force, its terms should be revealed not only to the court, but also to members of the class, including academic authors, as it has a bearing on the benefits and risks posed by the settlement. If the termination agreement is no longer in force, the litigants who negotiated it should be required to explain why the termination agreement was itself terminated.[113]

E.   *The Publisher Plaintiffs May Be Undermining the PASA*

In testimony before Congress, as well as in other public statements, Google and representatives of the Authors Guild and the AAP have waxed eloquent about the broad public access to the knowledge embodied in books that would be enabled if the GBS settlement is approved.[114]

While academics were not expecting approval of the settlement to mean that in-print books would be available through ISD subscriptions to our universities, they were given reason to believe that the ISD would include digital copies of many millions of out-of-print books from the collections of major research libraries. Academic researchers would benefit from the broader availability of these books.

The PASA allows rights holders of out-of-print books to withhold their books from "display uses" such as display books in the ISD.[115] However, GBS proponents have suggested that rights holders are unlikely to withhold out-of-print books from the ISD because allowing display uses would bring new commercial life to their books.[116]

The DOJ Statement of Interest, filed on September 18, 2009, raised the possibility that the aspiration that GBS would be a universal digital library of virtually all out-of-print books, as Google's co-founder

---

112. PASA, *supra* note 2, at 156.

113. The Plaintiffs have now indicated that the termination agreement is no longer in force. *See* Supplemental Memorandum, *supra* note 55, at 169–70.

114. *See*, *e.g.*, Hearing, *supra* note 63, at 37 (Statement of Paul Aiken, Executive Director of the Authors Guild: "[W]e expect the settlement to make at least 10 million out-of-print books available").

115. PASA, *supra* note 2, § 3.2.

116. *See*, *e.g.*, Hearing, *supra* note 63, at 5, 14–24 (Statement of Paul Aiken, Executive Director of the Authors Guild). The PASA requires rights holders who want to sell individual books through the consumer purchase model to make the same books available through the ISD. PASA, *supra* note 2, § 3.5(b)(iii).

predicted,[117] may be undermined by the publishers who negotiated this settlement. DOJ observed:

> It is noteworthy that the parties have indicated their belief that the largest publisher plaintiffs are likely to choose to negotiate their own separate agreements with Google . . . , while benefiting from the out-of-print works that will be exploited by Google due to the effect of the opt-out requirement for those works. There are serious reasons to doubt that the class representatives who are fully protected from future uncertainties created by the settlement agreement and who will benefit in the future from the works of others can adequately represent the interests of those who are not fully protected and whose rights may be compromised as a result.[118]

This suggests that the parties to this settlement have negotiated a deal that they expect to bind millions of other right holders, including academic authors, but not themselves.[119] The PASA does nothing to rectify this problem.[120] If the GBS settlement is really a fair resolution of the litigation and a fair allocation of rights among all stakeholders, one might expect the named plaintiffs to keep their out-of-print books in the settlement and participate in what they hail as its benefits. Instead, the DOJ Statement suggests they do not intend to include their books in the regime that would be established by the settlement.

Equally important, the aspiration for GBS to be a universal library of out-of-print books may also be undermined by other rights holders' decisions to exclude their books from display uses in GBS, to opt out of the settlement, to insist that Google not scan their out-of-print books, and to demand that Google remove books already scanned.[121] It is

---

117. *See* Brin, *supra* note 2.

118. DOJ Statement, *supra* note 41, at 10. One important benefit of the Google Partner Program as compared with the commercial regime to be established by the PASA is that partners can negotiate with Google to reduce the risks of uncertainty about the future for their books and tailor the agreements to meet their concerns. The future of the revenue models in the PASA is much more uncertain.

119. *See also* Morris Statement, *supra* note 88, at 1 ("Few if any major publishers currently intend to make their in print books available for sale through the Settlement Program . . . . It appears that most major publishers will not allow their out of print books to be sold through the Settlement Program either.").

120. *See* Second DOJ Statement, *supra* note 51, at 12 n.9 (noting that some of the plaintiffs have suggested that they may choose to exercise their rights under § 17.9 which would allow them to reach a bilateral deal with Google that would largely supersede the current agreement).

121. *See* PASA, *supra* note 2, § 3.5. The corpus of books eligible for inclusion in the ISD has already shrunk by about half because the PASA no longer includes most of the non-English-language foreign books scanned from major research library collections. *See*, *e.g.*, Lavoie & Dempsey, *supra* note 64 (estimating that half of the books in major research library collections are foreign-language books). Some librarians mourn this loss. *See*, *e.g.,* Posting of Kenneth Crews to Columbia University Libraries, Copyright Advisory Office Website, GBS

unknown at this point how many books have already been removed, excluded, or opted out; but the court should require the parties to make information of this sort publicly available. If the opt-out rates among sophisticated parties are high, that might suggest that the GBS settlement is not as fair and adequate as Google, AAP, and Guild spokesmen proclaim.[122]

The Publisher Plaintiffs seem not to be the only ones excluding their books from the settlement.[123] Most authors and author groups that have spoken out about GBS have urged authors to oppose or opt-out of the GBS settlement because they regard it as unfair.[124] It is noteworthy that not a single U.S. author group, apart from the Authors Guild, has come out publicly in support of the GBS settlement.[125]

The more numerous are the requests to exclude books from the ISD or the settlement, the less likely it is that the public benefit of the promised ten million-book database will materialize.

F.   *Consolidated Academic Author Objections*

The ten highest priority academic author objections to the PSA and PASA, as expressed in the September 3rd and January 27th letters to Judge Chin, include:

> 1. The PASA does not create true independence for the fiduciary for unclaimed works, nor criteria for accomplishing the fiduciary responsibilities and objectives for this role. In particular, this fiduciary should have the explicit authority to set prices for unclaimed books at $0 or make them available under Creative Commons licenses or other open access terms insofar as there is reason to think that their academic authors would prefer for them to be made available on these

---

2.0: The New Google Book (Proposed) Settlement, http://copyright.columbia.edu/copyright/ 2009/11/17/gbs-20-the-new-google-books-proposed-settlement/ (Nov. 17, 2009) ("Because the settlement is now tightly limited [by the exclusion of foreign books], so will be the ISD [Institutional Subscription Database]. The big and (probably) expensive database is no longer so exciting").

122. The BRR may not be able to sustain its operations if a very large number of rights holders for out-of-print books opt out of the PASA or take their books out of the regime it would establish by signing up as a Google Partner. This would undermine another benefit that the settlement was supposed to accomplish. Only the UWF is guaranteed to have a stable revenue source in the first decade post-settlement.

123. Authors Guild Executive Director Paul Aiken testified before Congress on Sept. 10, 2009, about his expectation that publishers might decline to participate in the settlement. Hearing, *supra* note 63, at 143. Reed Elsevier and Warner Books are among the major publishers that have opted their books out of the settlement. Supplemental Academic Objection Letter, *supra* note 48, at 13, n.62.

124. *See supra* notes 35–39.

125. *See, e.g.*, Bloom Objections, *supra* note 37.

terms. The UWF should not have the power to authorize Google to alter the texts of books.

2. To the extent the PASA anticipates charging profit-maximizing prices for books that remain unclaimed after ten years, this is inconsistent with the proposed legislation dealing with orphan books. It is for Congress, not for the litigants or the Court, to address orphan work issues.

3. The PASA's definition of "inserts" and "books" is unreasonable in light of the Supreme Court's *Reed Elsevier v. Muchnick* decision. The Supreme Court decision means that owners of copyrights in unregistered works are eligible to participate in copyright class action settlements. The court should direct the parties to renegotiate the agreement to offer unregistered rights holders of books and inserts the opportunity to participate in the settlement.

4. The litigating parties have failed to provide this court and members of the class with access to the termination agreement referred to in the PSA, which they negotiated amongst themselves.

5. The PASA, like the PSA, contains no meaningful limits on ISD price increases, especially as to higher educational institutions such as those with which we are affiliated. Because approval of the agreement will give Google a license to tens of millions of out-of-print books—a license that no competitor can feasibly get—the settlement agreement should contain some constraint on price increases. The Authors Guild did not adequately represent the interests of academic authors in negotiations with Google and the Publisher Plaintiffs on this important issue because their members have the same interests as the AAP publishers in prices being as high as possible.[126]

6. There are insufficient privacy protections for GBS users.[127]

---

126 Academic Objection Letter, *supra* note 39, at 2–5.

127. *Id*. at 6–7. The Privacy Authors' Objection offered numerous specific recommendations about the privacy protections that should be part of any GBS settlement agreement. *See* Privacy Authors and Publishers' Objection to Proposed Settlement at 1, Authors Guild Inc. v. Google Inc., No. 05-CV-8136 (S.D.N.Y. Sept. 4, 2009), *available at* http://www.openbookalliance.org/wp-content/uploads/2009/09/academic-author-letter-090309.pdf . Although the PASA is better than the PSA in providing that Google will not give personally identifiable data about users to the BRR without legal process, see PASA, *supra* note 2, § 6.6(f), more user privacy protections are needed.

7. The PASA should not require public libraries and other institutions with public access terminals to pay for user print-outs of pages from out-of-print books, which would undermine fair use.[128]

8. The PASA should not be so restrictive about annotation-sharing and non-consumptive research.[129] Google should make a stronger commitment to improving the quality of GBS book scans and metadata associated with them.[130]

9. The PASA should not grant Google power to exclude books from the corpus for editorial reasons or to exclude up to 15% of books eligible for the ISD from that database.[131]

10. The PASA is objectionable because it contains no back-up plan to preserve university access to books in the ISD in the event that Google chooses to discontinue as a provider of required library services under the agreement and no third party provider steps forward to take over this role.[132] The PASA should be amended so that fully participating library partners in the GBS enterprise have the authority to take over or reassemble from their library digital copies a corpus of books for continuing to provide the ISD to university research communities.[133]

Whatever the outcome of the fairness hearing, academic authors recognize that the public good is served by the existence of digital repositories of books, such as the GBS corpus. It would, however, be better for Google not to have a monopoly on a digital database of these books. The future of public access to the cultural heritage of mankind embodied in books is too important to leave in the hands of one company and one registry that will have a de facto monopoly over a huge corpus of digital books and rights in them. The settlement of a class action lawsuit is not a proper way to make such a profound set of changes in rights of authors and publishers, in markets for books, and procedures for resolving disputes as the PASA would bring about.

---

128. PASA, *supra* note 2, § 4.8(a)(ii); Academic Objection Letter, *supra* note 39, at 7.

129. *Id.* at 6, 8.

130. *See*, *e.g.*, Posting of Geoff Nunberg to Language Log, Google Books: A Metadata Train Wreck, http://languagelog.ldc.upenn.edu/nll/?p=1701 (Aug. 29, 2009, 05:46 PM) (acknowledging that Google does not have a contractual obligation nor a persuasive commercial incentive to ensure the accuracy of GBS' metadata).

131. Academic Objection Letter, *supra* note 39, at 9–10.

132. *Id*. at 10–11.

133. The HathiTrust would seem to be a likely candidate to take on this responsibility for the nonprofit research library community. *See* HathiTrust, Welcome to the Shared Digital Future, http://www.hathitrust.org/ (last visited Jan. 25, 2010).

APPENDIX 1

This Appendix provides a list of the 150 academic authors who were signatories to the Supplemental Academic Author Objection Letter submitted to Judge Denny Chin on January 27, 2010, of which this Article is a derivative work. The institutional affiliations of these authors are listed for identification purposes only.

* * *

Keith Aoki, Professor of Law, University of California, Davis

Timothy K. Armstrong, Associate Professor of Law, University of Cincinnati

David M. Auslander, Professor of Mechanical Engineering, University of California, Berkeley

Amin Azzam, Health Sciences Assistant Clinical Professor, University of California, Berkeley and University of California, San Francisco

Margo Bagley, Professor of Law, University of Virginia

Stuart Banner, Professor of Law, UCLA

Ann Bartow, Professor of Law, University of South Carolina

Lisa García Bedolla, Associate Professor of Education and Political Science, University of California, Berkeley

Steven Bellovin, Professor of Computer Science, Columbia University

Paul Schiff Berman, Dean and Professor of Law, Arizona State University

Robert C. Berring, Professor of Law, University of California, Berkeley

Christine L. Borgman, Professor of Information Studies, UCLA

Geoffrey C. Bowker, Professor of Information Sciences, University of Pittsburgh

Warigia Bowman, Assistant Professor, University of Mississippi

Ann Bridy, Associate Professor of Law, University of Idaho

Shane Butler, Professor of Classics and Associate Dean of the Humanities, UCLA

Margaret Chon, Professor of Law, Seattle University

Danielle Citron, Professor of Law, University of Maryland

Ronald C. Cohen, Professor of Chemistry and of Earth and Planetary Science, University of California, Berkeley

Julie E. Cohen, Professor of Law, Georgetown University

Michael Cole, University Professor of Communication, Psychology, and Human Development, University of California, San Diego

Kevin Collins, Associate Professor of Law, Indiana University

Lorrie Faith Cranor, Associate Professor of Computer Science and Engineering and Public Policy, Carnegie Mellon University

Kenneth D. Crews, Director, Copyright Advisory Office, Columbia

University Lecturer, Columbia Law School

Dana Cuff, Professor, Architecture and Urban Design, School of the Arts and Architecture, UCLA

David L. Dill, Professor of Computer Science, Stanford University

Holly Doremus, Professor of Law, University of California, Berkeley

Johanna Drucker, Professor of Information Studies, UCLA

Paul Duguid, Adjunct Professor, School of Information, University of California, Berkeley

Christopher Edley, Jr., Dean of the School of Law, University of California, Berkeley

Robin Einhorn, Professor of History, University of California, Berkeley

Jeffrey Elman, Professor of Cognitive Science and Dean of Social Sciences, University of California, San Diego

Steven Evans, Professor of Statistics and Mathematics, University of California, Berkeley

Cynthia Farina, Professor of Law, Cornell University

Malcolm M. Feeley, Professor of Law, University of California, Berkeley

Edward Felten, Professor of Computer Science, Princeton University

David Franklyn, Professor of Law, University of San Francisco

William Gallagher, Associate Professor of Law, Golden Gate University

Elizabeth Townsend Gard, Associate Professor of Law, Tulane University

Laura Gasaway, Professor of Law and Associate Dean, University of North Carolina

Shubha Ghosh, Professor of Law, University of Wisconsin

Dorothy Glancy, Professor of Law, Santa Clara University School of Law

Robert J. Glushko, Adjunct Professor, School of Information, University of California, Berkeley

Eric Goldman, Associate Professor of Law, Santa Clara University

Marc Greenberg, Professor of Law, Golden Gate University

Leah C. Grinvald, Assistant Professor of Law, Saint Louis University

Ramon Grosfoguel, Professor of Ethnic Studies, University of California, Berkeley

J. Alex Halderman, Assistant Professor of Computer Science, University of Michigan

Bronwyn H. Hall, Professor of the Graduate School, University of California, Berkeley

Sheldon Halpern, Professor of Law, Albany Law School

Paul Heald, Professor of Law, University of Georgia

Joe Hellerstein, Professor of Computer Science, University of California, Berkeley

Thomas Henderson, Professor of Computer Science, University of Utah

Steven A. Hetcher, Professor of Law, Vanderbilt University

Eric von Hippel, Professor or Technological Innovation, Sloan School of Management, Massachusetts Institute of Technology

Harry Hochheiser, Professor of Biomedical Informatics, University of Pittsburgh

Kinch Hoekstra, Assistant Professor of Law and Political Science, University of California, Berkeley

Lee Hollaar, Professor of Computer Science, University of Utah

Judith E. Innes, Professor of City and Regional Planning, University of California, Berkeley

Mary Jane Irwin, Professor of Computer Science and Engineering, Pennsylvania State University

Douglas W. Jones, Associate Professor of Computer Science, University of Iowa

Russell Jones, Professor of Plant and Microbial Biology, University of California, Berkeley

Steven Justice, Professor of English, University of California, Berkeley

Cem Kaner, Professor of Software Engineering, Florida Institute of Technology

Jerry Kang, Professor of Law, UCLA

Eric Kansa, Adjunct Professor, School of Information, University of California, Berkeley

Amy Kapczynski, Assistant Professor of Law, University of California, Berkeley

S. Blair Kauffman, Law Librarian and Professor of Law, Yale University

Ian Kerr, Professor of Law, University of Ottawa

Jay Kesan, Professor of Law, University of Illinois

Jeffrey Knapp, Professor of English, University of California, Berkeley

Raymond Ku, Professor of Law, Case Western Reserve University

Sapna Kumar, Assistant Law Professor, University of Houston

John Kuriyan, Professor of Molecular and Cell Biology, University of California, Berkeley

Michael Landau, Professor of Law, Georgia State University

James A. Landay, Associate Professor of Computer Science and Engineering, University of Washington

Marshall Leaffer, Professor of Law, Indiana University

Peter Lee, Professor of Law, University of California, Davis

Jeff A. Lefstein, Professor of Law, University of California, Hastings

Lawrence Lessig, Professor of Law, Harvard University

Jessica D. Litman, Professor of Law, University of Michigan

Joseph Liu, Professor of Law, Boston College

Lydia Pallas Loren, Professor of Law, Lewis & Clark

Lesa Mae Lorenzen-Huber, Clinical Assistant Professor, Indiana

University

Glynn Lunney, Professor of Law, Tulane University

Robert J. MacCoun, Professor of Public Policy and of Law, University of California, Berkeley

John MacFarlane, Associate Professor of Philosophy, University of California, Berkeley

Michael Madison, Professor of Law, University of Pittsburgh

Solangel Maldonado, Professor of Law, Seton Hall University

Peter Martin, Professor of Law, Cornell University

Donald Mastronarde, Professor of Classics, University of California, Berkeley

Maria Mavroudi, Professor of History, University of California, Berkeley

Patrick McDaniel, Professor of Computer Science, Pennsylvania State University

Jerome McGann, Professor, University of Virginia

Stephen McJohn, Professor of Law, Suffolk University

Christopher F. McKee, Professor of Physics and of Astronomy, University of California, Berkeley

Donald A. McQuade, Professor of English, University of California, Berkeley

Maureen C. Miller, Professor of History, University of California, Berkeley

Pablo G. Molina, Adjunct Professor of Ethics and Technology Management, and Information Security Management, Georgetown University

Anthony Newcomb, Dean of Arts and Humanities and Professor of Music and Italian Studies, University of California, Berkeley

Joanna Nichols, Professor of the Graduate School, University of California, Berkeley

Raymond T. Nimmer, Professor and Dean of the Law School, University of Houston

Helen Nissenbaum, Professor of Media, Culture, and Communication, New York University

Geoffrey Nunberg, Adjunct Professor, School of Information, University of California, Berkeley

G. Ugo Nwokeji, Professor of African American Studies, University of California, Berkeley

Michael Nylan, Professor of History, University of California, Berkeley

Anne J. O'Connell, Assistant Professor of Law, University of California, Berkeley

Michael Olivas, Professor of Law, University of Houston

Kent Olson, Clinical Professor of Medicine and Pharmacy, University of California, San Francisco and Clinical Professor of Health &

Medical Sciences, University of California, Berkeley

Nicholas Paige, Associate Professor of French, University of California, Berkeley

Frank A. Pasquale III, Professor of Law, Seton Hall University

Jim Pitman, Professor of Statistics and Mathematics, University of California, Berkeley

Thomas Pogge, Professor of Philosophy and International Affairs, Yale University

Kenneth Port, Professor of Law, William Mitchell College of Law

R. Anthony Reese, Professor of Law, University of California, Irvine

Jerome Reichman, Professor of Law, Duke University

Michael Risch, Associate Professor of Law, West Virginia University

John C. Roberts, Professor of Law and Dean Emeritus, DePaul University

Gene Rochlin, Professor of Energy and Resources, University of California, Berkeley

George Roussos, Professor of Computer Science and Information Systems, Birkbeck College

Pamela Samuelson, Professor of Law & Information, UC Berkeley

Sharon Sandeen, Professor of Law, Hamline University

Annalee Saxenian, Professor and Dean of the School of Information, University of California, Berkeley

Niels Schaumann, Professor of Law, William Mitchell College of Law

Rich Schneider, Director of the Molecular & Cell Biology Laboratory, University of California at San Francisco

David Shipley, Professor of Law, University of Georgia

Jessica Silbey, Professor of Law, Suffolk University

Lionel Sobel, Professor of Law, Southwestern Law School

Daniel Solove, Professor of Law, George Washington University

Sarah Song, Professor of Political Science and Law, University of California, Berkeley

Eugene H. Spafford, Professor of Computer Science, Purdue University

Philip B. Stark, Professor of Statistics, University of California, Berkeley

Andrew Stauffer, Associate Professor of Nineteenth-Century British Literature, University of Virginia

Katherine Strandburg, Professor of Law, New York University

Madhavi Sunder, Professor of Law, University of California, Davis

Stefan Tanaka, Professor of History, University of California, San Diego

Ula Taylor, Associate Professor of African American Studies, University of California, Berkeley

D. Paul Thomas, Professor of Political Science, University of California, Berkeley

David Touretzky, Research Professor of Computer Science, Carnegie

Mellon University

Siva Vaidhyanathan, Associate Professor of Media Studies, University of Virginia

Ivonne del Valle, Assistant Professor of Spanish & Portuguese, University of California, Berkeley

Jon Van Dyke, Professor of Law, University of Hawaii

Kathleen Vanden Heuvel, Adjunct Professor and Director of the Law Library, University of California, Berkeley

David Wagner, Professor of Computer Science, University of California, Berkeley

Dan Wallach, Associate Professor of Computer Science, Rice University

Jonathan Weinberg, Professor of Law, Wayne State University

Jane Winn, Professor of Law, University of Washington

David S. Wise, Professor Emeritus of Computer Science, Indiana University

Alec Yasinsac, Professor and Dean of the School of Computer and Information Sciences, University of South Alabama

Julie Cromer Young, Associate Professor of Law, Thomas Jefferson School of Law

Michael Zimmer, Assistant Professor of Information Studies, University of Wisconsin-Milwaukee

ROUGH WATERS AHEAD:

THE STATUS OF THE SAFE HARBOR PROVISION AFTER *PROVERIS SCIENTIFIC CORP. V. INNOVASYSTEMS, INC.*

KELLI BRENSDAL*

INTRODUCTION

The right to protect an idea or an invention is one that is rooted in the United States Constitution and has been codified by Congress in the form of patent protection.[1] In return for disclosure of a new technology, the inventor can exclude others from making, selling, or using the

---

   1. U.S. CONST. art. I, § 8, cl. 8; 35 U.S.C. § 101 (2010).

invention in the United States for a limited time.[2] These exclusive rights help to incentivize new innovation and reward inventors for their innovative ideas. However, a balance exists between the benefits to innovation gained by granting exclusive rights to the patent holder and the cost of denying competition in the marketplace.[3] This is especially true for biotechnology inventions such as pharmaceuticals and medical devices. Generic versions of these inventions decrease the price and make them more affordable for health care providers and the public.[4] However, the large costs and lengthy periods of research associated with successfully developing biotechnology places a high importance on patentability and patent protection in this area.[5] Such a delicate balancing act in the biotechnology sector has warranted careful attention from both the legislature and the courts.

One issue Congress has specifically addressed in the biotechnology sector is the *de facto* patent term extension granted to some patent holders as a result of requiring competitors to first receive the required FDA (or other regulatory agency) approval before putting a competing product on the market.[6] Any testing done by competitors to receive regulatory approval before the patent term expiration would be considered "use" of the patented technology, and therefore the testing would infringe on the patent holders rights. The patent holder could consequently prevent any competitor from performing the required tests until after the patent expired, and since regulatory approval can take years, the patent holder received a *de facto* patent term extension. To

---

2. 35 U.S.C. § 154(a)(1) (2009).

3. Patent rights allow the patent holder to avoid competition in the market and may lead to a limited time monopoly. The limited patent term is evidence of the attempt to balance the importance of encouraging innovation while avoiding strong monopolies that can "stifle" innovation. FTC, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY (2003), http://www.ftc.gov/os/2003/10/innovationrpt.pdf.

4. A generic drug is one that is "bioequivalent" to the brand-name drug listed in a New Drug Application (NDA). The FDA states that "[a] generic drug is identical—or bioequivalent—to a brand name drug in dosage form, safety, strength, route of administration, quality, performance characteristics and intended use. Although generic drugs are chemically identical to their branded counterparts, they are typically sold at substantial discounts for the branded price." FDA, What are generic drugs?, http://www.fda.gov/Drugs/ResourcesForYou/Consumers/BuyingUsingMedicineSafely/UnderstandingGenericDrugs/ucm144456.htm (last visited Mar. 1, 2010); *See also* Media Advisory, Comm. on Energy & Commerce, Bipartisan Group of Members Introduces "Promoting Innovation and Access to Life-Saving Medicines Act" (Mar. 11, 2009), *available at* http://energycommerce.house.gov/index.php?option=com_content&task=view&id=1528&Itemid=1.

5. John V. Duca & Mine K. Yucel, *Exploring the Economics of Biotechnology: An Overview*, *in* SCIENCE & CENTS: EXPLORING THE ECON. OF BIOTECHNOLOGY 6 (John V. Duca & Mine K. Yucel eds., 2002), *available at* http://www.dallasfed.org/research/pubs/science/ science.pdf.

6. *See* Proveris Scientific Corp. v. Innovasystems, Inc., 536 F.3d 1256, 1265 (Fed. Cir. 2008).

prevent this, Congress enacted 35 U.S.C. § 271(e)(1), often referred to as the safe harbor provision, to allow an exception to infringement if the research was "reasonably related to the development and submission of information" to the FDA.[7]

Although the intent of the legislation was to have a minimal impact on patent holders while allowing competing generic version to enter the market upon patent expiration, the courts began to construe the protection granted by the safe harbor statue very broadly.[8] And while some of this broadening was needed to clarify which types of activities qualified for the infringement exception, the Supreme Court may have gone too far when it decided *Merch KGaA v. Integra Lifesciences*.[9] In the wake of this broad (and slightly ambiguous) decision, the Court of Appeals for the Federal Circuit scrambled to clarify the scope of the exception. However, even after the decision in *Proveris Scientific Corp. v. Innovasystems, Inc*, there are still many lingering questions to be answered about how far the safe harbor statue will extend, and the concern that an overly broad interpretation of the type of activities that qualify for the exception is not in line with legislative intent and has diminished the value of biotech patents.

This paper discusses the need for Congressional clarification on the safe harbor provision and the consequences of an overly broad judicial interpretation of this statute. Section I of this paper discusses the history of both the common law research exception, and statutory safe harbor provision, and evaluates how the two are related. Section II summarizes the case history involved with the judicial expansion of section 271(e)(1). Section III discusses the issues remaining after the decision in *Merck* and analyzes if the decision in *Proveris* clarifies any of the outstanding issues. Then, several decisions decided post-*Merck* are analyzed, and finally, the implications of an overly broad research exemption and suggested congressional reformations to the statute are discussed.

I.   BACKGROUND

A.   Common Law Research Exception

Article I, Section 8 of the Constitution of the United States empowers Congress "[t]o promote the Progress of Science and useful

---

7. 35 U.S.C. § 271(e)(1) (2009).

8. Christopher M. Jackson, *The War on Drugs: How* KSR v. Teleflex *and* Merck v. Integra *continue the Erosion of Pharmaceutical Patent Protection*, 36 CAP. U. L. REV. 1029, 1041–43 (2008); *see also* Paul T. Nyffeler, *The Safe Harbor of 35 U.S.C. § 271(e)(1): The End of Enforceable Biotechnology Patents in Drug Discovery?* 41 U. RICH. L. REV. 1025, 1029–1030 (2007).

9. 545 U.S. 193 (2005).

Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."[10] This clause is often referred to as the Intellectual Property Clause. Later, patent protection laws were enacted to embody the rights conferred in the Constitution, and state that:

> Every patent shall contain a short title of the invention and a grant to the patentee, his heirs or assigns, of the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States, and, if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States, or importing into the United States, products made by that process, referring to the specification for the particulars thereof.[11]

The U.S. government made the compromise of giving an inventor the right to exclude others from making, using, or selling their invention for a limited time in return for full disclosure of the invention.[12] This compromise has the purpose of promoting innovation as well as making the research and development of new products more efficient[13]. If the right of exclusive use is violated within the given time period, the patent holder has a cause of action for patent infringement in a Federal Court.[14] However, the right to exclude others from using the invention was narrowed slightly by the courts using a common law research exception in an effort to further balance the public-private (disclosure-for-protection) bargain between the inventor and the U.S. government.[15] Under the common law research exception, the use of a patented invention for research purposes, included using the invention for experimental purposes, re-creating the invention to see if it works as claimed, and using research tools in drug delivery, was not considered infringement.[16] In *Whittemore v. Cutter*, Judge Story stated that, "it could never have been the intention of the legislature to punish a man, who constructed such a machine merely for philosophical experiments, or for the purpose of ascertaining the sufficiency of the machine to produce its

---

10. U.S. CONST. art. I, § 8, cl. 8.

11. 35 U.S.C. § 154(a)(1) (2009).

12. *See* FTC, *supra* note 3.

13. *See* Wolrad Prinz zu Waldeck und Pyrmont, *Research Tool Patents After Integra v. Merck—Have They Reached a Safe Harbor?*, 14 MICH. TELECOMM. & TECH. L. REV. 367, 371–72 (2008).

14. *See* 35 U.S.C. § 271(a) (2009).

15. Whittemore v. Cutter, 29 F.Cas. 1120, 1121 (C.C.D. Mass. 1813).

16. Katherine A. Helm, *Outsourcing the Fire of Genius: The Effects of Patent Infringement Jurisprudence on Pharmaceutical Drug Development*, 17 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 153, 167 (2006).

described effects."[17] In this case, the plaintiff brought suit for the infringement of a machine used for making cotton and wool cards, and the court returned a verdict for the plaintiff. The defendant appealed because he only made the machine for experimental purposes and never intended to sell it for any profit, and therefore, the reviewing reversed the decision. Later, in *Poppenhusen v. Falke*, the court upheld the research exception to infringement stating, "an experiment with a patented article for the sole purpose for gratifying a philosophical taste, or curiosity, or for mere amusement, is not an infringement of the rights of the patentee."[18] Financial motivation seemed to be the driving force behind these decisions. If a person had no intention of gaining financially from the endeavor, then no infringement had taken place.[19]

On the other hand, if there was to be some commercial benefit from the use of the invention, courts were reluctant to allow the research exception as a defense. In *Spray Refrigeration Co. v. Sea Spray Fishing, Inc.*, the court held that the defendant's use of a patented freezing apparatus on a commercial fishing boat constituted infringement.[20] Although the court agreed the invention was being used experimentally, because the boat was engaged in a commercial operation, the research exception did not apply.[21] In a similar holding, the court held in *Embrex, Inc. v. Service Engineering Corp.* that even the slightest commercial implication would render the experimental use exception inapplicable.[22] Embrex was the exclusive licensee for a patented method for immunizing birds against disease in vitro.[23] The defendants used the method in an attempt to build their own inoculating machine and no sales directly resulted from the use.[24] Despite this, the court upheld the idea that any commercial use of a patented invention, despite the research aspects of the use, made the research exception inapplicable.[25]

The common law research exception was employed by courts to help balance the private interests of the inventor with the public interests of society. However, since the exception was rarely applied when there was any indication of commercial use, pharmaceutical companies who began performing the required research to receive FDA approval on a competing generic drug could not successfully use the common law

---

17. *Whittemore*, 29 F.Cas. at 1121.

18. 19 F.Cas. 1048, 1049 (C.C.S.D.N.Y. 1861).

19. Gina C. Freschi, *Navigating the Research Exemption's Safe Harbor: Supreme Court to Clarify Scope-Implications for Stem Cell Research in California*, 21 SANTA CLARA COMPUTER & HIGH TECH. L.J. 855, 859 (2005).

20. 322 F.2d 34, 37 (9th Cir. 1963).

21. *Id.*

22. *See* 216 F.3d 1342, 1352 (Fed. Cir. 2000).

23. *Id.* at 1349.

24. *Id.*

25. *Id.* at 1352.

research exception as a defense to infringement.[26] Therefore, a company could not begin to develop a generic version of any drug until the patent term for that drug expired. This resulted in the patent holder enjoying a *de facto* patent term extension while other companies sought approval to put competitive products on the market. This problem became apparent in *Roche v. Bolar*.[27] Roche Product, Inc. sought to enjoin Bolar Pharmaceutical Co., from taking the statutorily required steps necessary to market the brand name version of Roche's drug Dalmane.[28] Dalmane had achieved high financial success and because FDA approval of a generic version can take years, Bolar did not wait for the patent to expire before performing the necessary experiments needed for approval.[29] Bolar claimed as a defense that their use of the patented technology was simply "experimental," and therefore did not constitute infringement.[30] The court disagreed, however, and found infringement because Bolar's intended use was not for amusement but solely for business purposes.[31] In reaching their conclusion, the court stated, "[w]e cannot construe the experimental use rule so broadly as to allow a violation of the patent laws in the guise of 'scientific inquiry,' when that inquiry has definite, cognizable, and not insubstantial commercial purposes."[32]

B.   *The Statutory Safe Harbor Provision: 271(e)(1)*

The holding in *Roche v. Bolar* made apparent that pharmaceutical companies who wished to market a generic version of any drug would have to wait until the patent term expired and then seek FDA approval.[33] With this strict limitation in place, some argued that the private-public balance had shifted too far in favor of patent protection because patent

---

26. All pharmaceutical compounds are required to receive FDA approval before being placed on the market, which includes any generic version. "No person shall introduce or deliver for introduction into interstate commerce any new drug, unless an approval of an application…is effective with respect to such drug." 21 U.S.C. § 355(a) (2009). The complete FDA approval process takes approximately eight and half years to complete. Six years are devoted to the necessary phase investigations while the approval process takes another two and half. For an overview of the review process, *see* Drugs.com, *New Drug Approval Process*, http://www.drugs.com/fda-approval-process.html (last visited Mar. 1, 2010).

27. 733 F.2d 858, 860 (Fed. Cir. 1984); *see also* Daniel J. Ford, Merck v. Integra*: Implications for the common Law and Statutory Exemptions*, 7 LOY. LAW & TECH. ANN. 123, 131 (2007).

28. *Roche*, 733 F.2d at 860.

29. *Id.*

30. *Id.* at 861.

31. *Id.* at 863.

32. *Id.*

33. Rebecca Lynn, Merck KGaA v. Integra Lifesciences I, Ltd.*: Judicial Expansion of § 271(e)(1) Signals a Need for a Broad Statutory Experimental Use Exemption in Patent Law*, 21 BERKELEY TECH. L.J. 79, 82 (2006).

holders enjoyed a patent term extension.[34] Critics of the *Roche* holding argued the rights of a patent holder to a pharmaceutical drug patent should be balanced with a market approach that allowed generic versions of the drug to compete as soon as possible.[35] Introducing generic versions into the market could lower drug prices and make it more affordable for the public.[36] Therefore, addressing this *de facto* patent term extension became vital to many in Congress.[37]

To compensate for the *de facto* patent term extension, the legislature enacted the Drug Price Competition and Patent Term and Restoration Act of 1984, which is often referred to as the Hatch-Waxman Act.[38] Part of this act, codified as 35 U.S.C. § 271(e)(1) (often called the safe harbor provision) provides that:

> [I]t shall not be an act of infringement to make, use, offer to sell, or sell . . . a patented invention . . . solely for uses reasonably related to the development and submission of information under a federal law which regulates the manufacture, use, or sale of drugs or veterinary biological products.[39]

Effectively, the act allowed a company to begin the required tests to seek FDA approval before the end of a patentee's term.[40] This allowed companies to receive FDA approval early and begin to market a generic form of a drug when the patent term on the original drug ended.[41] Congress believed this would put an end to the *de facto* patent term extension that patentees received as a result of the patent laws and the holding in *Roche v. Bolar*.[42]

Despite the narrow reasoning for Congress's enactment of

---

34. The CAFC recognized the problem of a de facto patent term extension and invited congress to change the law in this area. *Roche,* 733 F.2d at 863. See also Brendan M. O'Malley, Merck v. Integra *and its Aftermath: A Safe Harbor for the Commercial Use of Biotechnology Research Tools?*, 23 CARDOZO ARTS & ENT. L.J. 739, 745 (2006).

35. Lynn, *supra* note 33.

36. For a detailed investigation into the effect of the Hatch-Waxman act on pharmaceutical prices, see CONGRESSIONAL BUDGET OFFICE, HOW INCREASED COMPETITION FROM GENERIC DRUGS HAS AFFECTED PRICES AND RETURNS IN THE PHARMACEUTICAL INDUSTRY (1998), *available at* http://www.cbo.gov/doc.cfm?index=655&type=0.

37. Lynn, *supra* note 33.

38. Pub. L. No. 98-417, 98 Stat. 1585 (codified at 15 U.S.C. §§ 68b-68c, 70b (2009); 21 U.S.C. §§ 301 note, 355, 360cc (2009); 28 U.S.C. § 2201 (2009); 35 U.S.C. §§ 156, 271, 282 (2009)).

39. 35 U.S.C. § 271(e)(1) (2009).

40. Gerald J. Mossinghoff, *Overview of the Hatch-Waxman Act and Its Impact on the Drug Development Process* 54 FOOD & DRUG L.J. 187, 190 (1999), *available at* http://www.fdli.org/pubs/Journal%20Online/54_2/art2.pdf.

41. *Id.*

42. *See* O'Malley, *supra* note 34, at 746.

271(e)(1), courts began to construe this section very liberally and granted a large amount of protection to those who claimed to be operating under the safe harbor provision.[43] The language of the "safe harbor" section of 271(e)(1) was limited to generic drug manufacturers or to drug patents, but was expanded to include other inventions and products.[44] In addition, the types of "infringing" activities that qualified under the exception were also expanded.[45]

II. CASE LAW: THE SAFE HARBOR STATUE PROTECTION IS DEFINED

A. *The Judicial Expansion of Protection Under 271(e)(1)*

The first major judicial expansion of § 271(e)(1) came in *Eli Lilly and Co. v. Medtronic, Inc.*[46] Here, Eli Lily sought to enjoin Medtronic from testing and marketing an implantable cardiac defibrillator, a medical device used in the treatment of heart patients.[47] Medtronic defended by claiming that its actions were reasonably related to the development and submission of information needed for FDCA approval.[48] The District Court rejected this argument, holding that § 271(e)(1) does not extend to medical devices.[49] A jury trial then found for Eli Lily.[50] The Court of Appeals for the Federal Circuit reversed holding that "respondent's activities could not constitute infringement if they had been undertaken to develop information reasonably related to the development and submission of information necessary to obtain regulatory approval under the FDCA."[51]

The Supreme Court agreed stating that, "[t]he phrase 'patented invention' in § 271(e)(1) is defined to include all inventions, not drug-related inventions alone."[52] In addition, the Court disagreed with Eli Lilly's interpretation of the phrase "a Federal law which regulates the manufacture, use or sale of drugs," as referring to only those provisions that regulate drugs.[53] Instead the court interpreted it to refer to the entirety of any Act, including the FDCA, at least some of whose

---

43. Lynn, *supra* note 33, at 86.
44. Helm, *supra* note 16, at 176.
45. *Id.*
46. 496 U.S. 661 (1990).
47. *Id.* at 664.
48. *Id.*
49. *Id.*
50. *Id.*
51. *Id.*
52. *Id.* at 665.
53. *Id.*

provisions regulate drugs.[54] The Court believed that had Congress intended for medical device patents to be excluded from the protection of the Safe Harbor statute, "there were available such infinitely more clear and simple ways of expressing that intent that it is hard to believe the convoluted manner petitioner suggests was employed would have been selected."[55] In the end, the Court held that actions taken that are reasonably related to the FDCA approval of medical devices were covered under § 271(e)(1), and would be exempt from infringement.[56] The ultimate effect of the holding in Eli Lilly was to expand the protection of the safe harbor exception to include medical device patents as well as drug patents.

Another judicial expansion of the safe harbor statute came in *Telectronics Pacing Systems, Inc. v. Ventritex, Inc.*[57] In this case, Ventritex began clinical testing on its implantable defibrillator before Telectronics' patent had expired.[58] Ventritex received approval from the FDA to sell devices, at cost, for implantation into patients in order to conduct the required clinical trials.[59] The president of Ventritex referred to the ongoing clinical trials in fund-raising efforts and Ventritex mailed Private Placement Memorandums that also referred to the ongoing clinical trials in order to raise money to continue with the clinical experiments and for manufacturing equipment.[60] Telectronics brought suit claiming that Ventritex's actions were not exempt under § 271(e)(1) because the data obtained from the clinical trials was used for commercial purposes and these purposes were not solely related to FDA approval.[61] The District court granted summary judgment for Ventritex.[62]

The Federal Circuit Court held, however, that the actions Ventritex had taken were solely for uses reasonably related to FDA approval, and therefore exempt from infringement under § 271(e)(1).[63] The court concluded that using information from clinical trials to obtain further funding did not in turn make the original activities infringing ones.[64] In concluding this, the court stated, "[Telectronics'] case here is based on the theory that the statute requires that the original exemption of the making, using and selling activities be revoked when the resulting data is later used for non-FDA reporting purposes. We do not read the statute

---

54. *Id.*
55. *Id.* at 667.
56. *Id.* at 679.
57. 982 F.2d 1520 (Fed.Cir. 1992).
58. *Id.* at 1521.
59. *Id.*
60. *Id.* at 1521–22.
61. *Id.* at 1522.
62. *Id.*
63. *Id.* at 1525.
64. *Id.* at 1524.

as implying any such limitation."[65] This holding allowed companies to use information for commercial purposes, as long as the data was originally obtained solely for purposes reasonably related to FDA approval and not for commercial purposes.

Although both of these cases expanded the safe harbor exception to infringement, arguably both results were consistent with Congressional intent. Both Eli Lily and Telectronics would have enjoyed the *de facto* patent term extension if their competitors were required to wait before receiving federal approval until after patent expiration. However, the Court expanded the safe harbor provision even further when deciding *Merck KGaA v. Integra Lifesciences*.[66]

B.   Merck KGaA v. Integra Lifesciences*: The Supreme Court's clarification of "Reasonably Related"*

One of the largest judicial expansions in protection offered by the safe harbor statute came in the Supreme Court decision in *Merck KGaA v. Integra Lifesciences*. Integra owns five patents related to a single letter notation tripeptide, known as the "RGD peptide."[67] Before the end of these patent terms, Merck, together with Scripps Research Institute, performed angiogenesis research by *in vitro* and *in vivo* testing of RGD peptides.[68] The tests focused on EMD 66203 and two closely related derivatives, EMD 85189 and EMD 12194, and measured the efficiency, and toxicity of the peptides as angiogenesis inhibitors.[69] Later, Merck "initiated a formal project to guide one of its RGD peptides through the regulatory approval process."[70] Integra filed suit, claiming infringement of their patents.[71] Merck replied by claiming their activity did not infringe Integra's patents and even if it did, their research was exempt from infringement under 35 U.S.C. § 271(e)(1).[72] The District Court held that Merck had failed to show their actions were protected by § 271(e)(1) and awarded damages to Integra.[73] The Federal Circuit agreed, holding, "the Scripps work sponsored by [petitioner] was not clinical testing to supply information to the FDA, but only general biomedical research to identify new pharmaceutical compounds."[74] In addition, the

---

65. *Id.*
66. 545 U.S. 193 (2006).
67. *Id.* at 197.
68. *Id.*
69. *Id.* at 198–99.
70. *Id.* at 199.
71. *Id.* at 200.
72. *Id.*
73. *Id.* at 201.
74. *Id.* (quoting Integra Lifesciences I, Ltd. v. Merck KGaA, 331 F.3d 860, 866 (Fed. Cir. 2003)).

Federal Circuit felt that limited construction of the safe harbor exception was needed in order to protect research tool patents from being depleted of value and did not think the statute included pre-FDA approval experiments that would never actually be submitted to the FDA.[75]

The Supreme Court came to a different conclusion. The Court held that the "271(e)(1) exemption from infringement extends to all uses of patented inventions that are reasonably related to the development and submission of any information under the FDCA."[76] The Court found this to include preclinical studies of compounds in the preparation of submissions to the FDA.[77] In addition, the Court noted that just because experimental information is not reported to the FDA does not mean it is an infringing activity, stating, "the relationship of the use of a patented compound in a particular experiment to the 'development and submission of information' to the FDA does not become more attenuated simply because the data from that experiment are left out of the submission that is ultimately passed along to the FDA."[78] However, the Court only slightly limited its holding by agreeing with the Federal Circuit that the safe harbor exception does not reach all experimental activity and does not protect basic scientific research.[79] However, the extent of experimental activity that would be exempt from infringement was not qualified.

C.   Proveris Scientific Corp v. Innovasystems, Inc.: *A Restriction to the Safe Harbor Provision*

Following the holding in *Merck*, holders of research tool patents became increasingly concerned about the value of their patents.[80] The Federal Circuit attempted to address this problem and other issues left pending after *Merck* in *Proveris*.[81] Proveris is the owner of a patent describing a system and apparatus for characterizing aerosol sprays commonly used in drug delivery devices.[82] The spray characterization is often used to calibrate drug delivery methods in order to maximize efficiency and effectiveness of the drug.[83] Although the inhaler-based

---

75. *Id.* at 201, 205 n.7.

76. *Id.* at 202. (emphasis removed).

77. *Id.*

78. *Id.* at 207.

79. *Id.* at 206.

80. There are two basic types of patents in the pharmaceutical industry: research tool patents and pioneer drug patents. Research tool patents are directed to the research and development of new drugs and can include drug targets, cell lines, transgenic animals, drug screening assays and large libraries of potential drugs. *See* Helm, *supra* note 16, at 5.

81. Proveris Scientific Corp. v. Innovasystems, Inc., 536 F.3d 1256 (Fed. Cir. 2008).

82. *Id.* at 1258.

83. *Id.*

drug delivery devices this invention can be used to test are subject to FDA approval, the systems and apparatus claimed in Proveris's invention are not.[84] Innova makes and sells an Optical Spray Analyzer (OSA) that measures the physical parameters of aerosol sprays used in nasal spray drug delivery systems.[85] Proveris filed suit against Innova, alleging infringement of its patent. Innova responded by claiming its actions were exempt from infringement under § 271(e)(1) because their OSA devices are used by third parties solely for the development and submission of information to the FDA.[86] The District Court held however, that Innova's manufacture and sale of the OSA devices are not immunized under the safe harbor provision of 35 U.S.C. § 271(e)(1), and Innova appealed.[87]

The Federal Circuit agreed with the district court and held that the sale and manufacture of the OSA devices was not immunized by § 271(e)(1).[88] In reaching this conclusion, the court first explained the two basic reasons behind the Hatch-Waxman Act in which the safe harbor provision is found. First, a *de facto* patent term reduction exists due to the amount of time required to obtain FDA approval.[89] Because a patent is usually filed in the early years of the regulatory review, but market entry is delayed waiting for approval, early years of a patent term are spent obtaining FDA approval rather than making profit.[90] The Act dealt with this by granting patent term extensions to those "products" claiming delays due to the FDA approval process.[91] Second, a *de facto* patent term extension existed because other companies had to wait until a patent had expired before experiments could be performed in order to get FDA approval.[92] This was the reason § 271 (e)(1) was put in place.[93] The Federal Circuit emphasized this point stressing that the safe harbor provision only applied to those inventions that were required to seek FDA approval before being placed on the market.[94]

In this case, the invention itself was not subject to FDA approval. And although it was used for the development and submission of information to the FDA, the information is not regarding the invention itself.[95] In other words, Innova is not the party seeking FDA approval

---

84. *Id.*
85. *Id.* at 1259.
86. *Id.* at 1259–60.
87. *Id.* at 1260.
88. *Id.* at 1265
89. *Id.* at 1260–61.
90. *Id.* at 1261.
91. *Id.*
92. *Id.*
93. *Id.*
94. *Id.* at 1265.
95. *See id.*

before entry into the market in order to compete with Proveris. The court stated, "because the OSA device is not subject to FDA premarket approval, and therefore faces no regulatory barriers to market entry upon patent expiration, Innova is not a party who, prior to enactment of the Hatch-Waxman Act, could be said to have been adversely affected by the second distortion."[96] Viewing it from the other side as well, prior to the enactment of the Hatch-Waxman Act, Proveris would not have been granted a *de facto* patent term extension because Innova could enter the market immediately upon the patent term expiration.[97] For these reasons, Innova's actions were not exempt from infringement under the safe harbor exception.

The decision in *Proveris* was the first major judicial limitation to the safe harbor exception since its enactment in 1984. Although the Court had previously alluded to some limitations in the protection the exception granted, there had never been any cognizable upper bounds. *Proveris* helped to provide the upper bounds by holding that not all research and experimental activities were protected from infringement claims simply because it was related to FDA approval. The scope of the exception was narrowed slightly to include a requirement that the research, and the FDA approval, be focused on the invention at issue. The court focused on the legislative intent of the safe harbor provision, to eliminate the *de facto* patent term extension that some patent holders enjoyed, and reasoned that any activity outside of this scope could still be considered infringement.

III. DISCUSSION

A.   *Problems with Merck: Does Proveris Address Any of the Issues Left Pending?*

Eli Lilly, *Telectronics*, and *Merck* all expanded the exemption from infringement available under 35 U.S.C. § 271(e)(1) drastically from the original common law research exemption. It seemed from the Supreme Court's holding in *Merck* that, as long as the research was eventually used for FDA approval, the use of a patented invention was allowed.[98] Following the decision in *Merck*, there was substantial controversy surrounding the Court's interpretation of the safe harbor exception. Many commentators suggested that defining the bounds of the exception should be left up to Congress.[99] If such were the case, large

---

96. *Id.*
97. *See id.*
98. *See* Lynn, *supra* note 33.
99. Harold C. Wegner, *Post–Merck Experimental Use and The "Safe Harbor,"* 15 FED. CIR. B.J. 1, 13–17 (2005).

pharmaceutical companies would no doubt lobby for large amounts of protection in order to utilize patented tools and drug intermediates in the ongoing research and development of the new pharmaceuticals.[100] The owners of research tool patents, however, would most likely lobby to restrict the safe harbor exception in order to protect the value of their patents, especially since the Court in *Merck* failed to address how the broad interpretation of the safe harbor exception would affect research tool patents. Congress has not yet set out to define the limits.

However, it has also been suggested that the decision in *Merck* was not consistent with legislative intent to begin with.[101] Section 271(e)(1) was enacted in order to prevent *de facto* patent term extension that resulted from the decision in *Roche*. Congress intended that the safe harbor provision would allow immediate public access to generic medications upon expiration of a patent.[102] The purpose was not simply to allow patented inventions to be used in any type of research. As evidence of this, comments were made in the House Committee Report that strongly suggest the safe harbor provision was intended to have a minimal impact.[103] The exception was only to be applied to "a limited amount of testing so that generic manufactures can establish the bioequivalency of a generic substitute."[104] In addition it states, "all that the generic [manufacturer] can do is test the drug for purposes of submitting data to the FDA for approval. Thus, the nature of the interference is de minimis."[105] It seems contrary to Congress's intent to construe a safe harbor that permits any activity as long as it is somehow related to drug discovery.

The research in *Merck* was in the pre-FDA approval process and was not directly for the submission of information to the FDA.[106] The experimental use of a patented compound for pre-submission research is not stated in the legislative goals underlying § 271(e)(1).[107] Therefore, the Court of Appeals for the Federal Circuit focused on this legislative intent in determining that Merck's research was not within the scope of § 271(e)(1) and constituted infringement.[108] The Supreme Court, on the other hand, almost completely ignored the legislative intent reasoning argued by the Federal Circuit and instead went on the offensive and

---

100. *Id.*

101. *See* Mike Rothwell, *A Snapshot of an Industry: The Biotechnology Sector and the Judicial Misgivings of a General Court,* 8 CHI.-KENT J. INTELL. PROP. 141, 143 (2008).

102. *See* Helm, *supra* note 16.

103. *See* H.R. REP. NO. 98-857, at 8 (1984).

104. *Id.*

105. *Id.* at 30.

106. Merck KGaA v. Integra Lifesciences I, Ltd., 545 U.S. 193, 195 (2006).

107. Rothwell, *supra* note 101.

108. Integra Lifesciences I, Ltd. v. Merck KGaA, 331 F.3d 860, 867 (Fed. Cir. 2003).

expanded the safe harbor exception to include "all uses of patented inventions that are reasonably related to the . . . submission of any information under the FDCA."[109] Such a rule clearly does not have a "de minimis" effect as Congress had intended. The Court argued that to narrowly define the exception as the Federal Circuit did, "is effectively to limit assurance of exemption to the activities necessary to seek approval of a generic drug . . . [and] the statutory text does not require such a result."[110] However, the Federal Circuit's limitation seems to be exactly in line with what was indicated by the House Committee Report and the circumstances that caused the enactment of § 271(e)(1) to begin with.[111]

The decision on *Proveris*, on the other hand, seems to be directly in line with Congress's intent. It is clear from the House Committee Report that Congress never intended § 271(e)(1) to apply to the use of a patented instrument, not subject to FDA approval, in conducting research on an unrelated drug, even if the research was to be used for FDA approval.[112] This would be simply going too far. However, the decision in *Proveris* only helps to set the very upper bounds to the safe harbor exception. It does little to limit the overbroad protection granted by the Supreme Court in *Merck*.

Even putting the legislative intent argument aside, there are still several more issues that the decision in *Merck* left lingering. *Proveris* was able to provide clarity on some of the issues, but some are still left unanswered. First, the Court's decision in *Merck* failed to address the implications of their decisions on research tool patents.[113] Many feared that the value of research tool patents would diminish significantly as a result.[114] However, *Proveris* seems to suggest that many research tool patents will retain their value. If the research tool is not subject to FDA approval, as was the case in *Proveris*, then it is possible that the tool could not be used in research without a license agreement to do so. The language used in the decision in *Proveris* seems to suggest that any use without such agreement would constitute infringement because it was not the legislature's intent to protect this type of use in establishing the safe harbor exception. Whether or not this is true is a little unclear, however. The defendant in *Proveris* was not using the research tool for their own research, but instead was manufacturing and selling it to third parties for their use in research.[115] Specifically, the court framed their

---

109. *Merck*, 545 U.S. at 201.
110. *Id*. at 208.
111. Rothwell, *supra* note 101, at 141–42.
112. *See* H.R. REP. NO. 98-857 at 8 (1984).
113. Ford, *supra* note 27, at 134–35.
114. *Id*.
115. Proveris Scientific Corp v. Innovasystems, Inc., 536 F.3d 1256, 1259 (Fed. Cir. 2008).

analysis by asking, "whether section 271(e)(1) immunizes the manufacture, marketing, or sale of Innova's OSA, which is used in the development of FDA regulatory submissions, but is not itself subject to the FDA premarket approval process."[116] Therefore, if the facts were different and Innova was using the tool for their own research, the outcome might have been different. However, the Federal Circuit's desire to limit the safe harbor exception and the need to return some exclusive rights to the patent holder seems to suggest this would not be the case.[117] Specifically, the court stated:

> Because the OSA device is not subject to FDA premarket approval, and therefore faces no regulatory barriers to market entry upon patent expiration, Innova is not a party who, prior to enactment of the Hatch-Waxman Act, could be said to have been adversely affected by the second distortion. For this reason, we do not think Congress could have intended that the safe harbor of section 271(e)(1) apply to it.[118]

The court never qualified this holding by stating that this conclusion was only true because Innova manufactured and sold the devices. This seems to indicate that the holding would be the same if Innova were the party to use the device.[119] However, because the question was framed to exclude the term "use," the door was left slightly open for a defendant to use the safe harbor exception if they were not manufacturing and selling the tool, but instead using it in research themselves.[120] Due to the large amount of ambiguity in this, it is important for Congress to clarify the safe harbor provision.

In addition to the ambiguity surrounding the status of research tool patents, a second criticism of the holding in Merck is that it failed to clearly define the "reasonably related requirement."[121] Both the Federal Circuit in *Telectronics* and the Supreme Court in *Merck* discussed the "reasonably related requirement," but in neither place were the requirements clearly defined, leaving some confusion in this area.[122] In *Merck*, the Court held that "reasonably related" did not require the information actually be submitted to the FDA.[123] As discussed previously, it was enough that the information be obtained because the party "reasonably believed" that the compound may work and therefore

---

116. *Id.* at 1265.
117. *See id.*
118. *Id.*
119. *See id.*
120. *See id.*
121. Ford, *supra* note 27.
122. See *id.*
123. *Proveris*, 536 F.3d at 1259.

instigated pre clinical trial studies.[124] The court in *Proveris*, however, did not go into any more detail about what might be required to satisfy the "reasonably related requirement" than was stated in *Merck*. The court in *Proveris* indicated that the manufacture and sale of a device that is not subject to FDA approval to third parties is not "reasonably related to the development and submission of information under a Federal law which regulates the manufacture, use, or sale of drugs or veterinary biological products."[125] However, the court did not explicitly state this.[126] Instead, their decision was premised on the intentions of the legislature.[127] Therefore, the decision in *Proveris* does little to clarify the requirements for the "reasonably related" part of the exception. Because both *Merck* and *Proveris* fail to define "reasonably related," Congress should clarify what types of activities are exempt from infringement under the safe harbor provision.

Another area left uncovered by the decision in *Merck* was the status of the common law research exception.[128] Four years earlier, when the Federal Circuit decided *Madey v. Duke University*, many questions remained as to whether the common law research exception was still good law.[129] The plaintiff in *Madey* was the owner of a patent for free electron laser technology.[130] Madey was a tenured professor with Duke University and was the director of the Free Electron Laser lab.[131] The lab used some of the technology covered by Madey's patents and had much success in obtaining grant money and achieving scientific success.[132] Following a dispute over Madey's management of the FEL lab, Madey retired from Duke.[133] But the university continued to use the lab that contained the technology held in Madey's patents.[134] Madey brought suet for patent infringement and Duke defended with the common law research exception, stating that they only used the equipment for educational research purposes.[135] The District court found for Duke University holding that the experimental use defense covered uses that were "'solely for research, academic or experimental purposes.'"[136] The Federal Circuit disagreed and overturned the decision holding that the

---

124. *See id.*
125. *See id.* at 1266.
126. *See id.*
127. *See id.*
128. Ford, *supra* note 27, at 135.
129. *Id.*
130. Madey v. Duke Univ., 307 F.3d 1351, 1352 (Fed. Cir. 2002).
131. *Id.* at 1352.
132. *Id.*
133. *Id.*
134. *Id.*
135. *Id.* at 1354.
136. *Id.* at 1355 (citation omitted).

experimental research defense only covered research for amusement.[137] The effect of the decision was to prevent non-profit organizations from using the experimental research defense even though the research was being performed for academic purposes.

The Court in *Merck* declined to address the status of the common law research exception.[138] And while the decision in *Proveris* did limit the safe harbor exception, the court also refrained from addressing the status of the common law research exception, leaving the question open still.

However, the decision in *Madey* may have positive aspects in the area of research tool patents.[139] The intended purpose of the technology Madey patented was for a research tool and that is what the FEL laboratory used it for.[140] If Duke University were allowed to use the device without licensing the technology, Madey would be deprived of the revenue from his patent.[141] This in turn would make a research tool patent less valuable and thus the incentive to research and develop new research tools would be much lower.[142] Therefore the decision in *Madey* helped to protect this incentive.[143] The decision in *Proveris* could be seen as accomplishing the same goal. If companies were allowed to use research tools, designed for research, without licensing them, revenue would again be lost. By limiting the safe harbor exception, most research tool patents retain their value and there are still large incentives to develop new research tools.

B.   Decision Post Merck: Should the Reasoning Behind the Decision in Proveris Have Influenced the Outcome?

Given Congress's lack of clarity in the language of section 271(e)(1) and the ambiguous decisions in *Merck*, courts scrambled to interpret the safe harbor provision in other fact situations. Many of these cases cite *Merck* but the Federal Circuit decision in *Proveris* and a consideration of Congressional intent may have influenced the outcomes, or at least warranted discussion. One such case is *Classen Immunotherapies, Inc. v. Biogen IDEC*.[144] Classen was the owner of several patents dealing with the mechanism for evaluating the effectiveness of vaccine administration schedules.[145] Classen claimed that several companies, namely Biogen and

---

137. *Id.* at 1356.
138. *See* Merck KGaA v. Integra Lifesciences I, Ltd., 545 U.S. 195 (2006).
139. Ted Hagelin, *The Experimental use Exemption to Patent Infringement: Information on Ice, Competition on Hold*, 58 FLA. L. REV. 483, 486 (2006).
140. *Id.* at 502.
141. *Id.*
142. *Id.*
143. *See id.*
144. 381 F. Supp. 2d 452, 454 (D. Md. 2005).
145. *Id.*

GSK infringed on his patents when they began studies in the late 1990s to determine the correlations between childhood vaccinations and influenza and diabetes. Biogen and GSK defended by claiming their actions were solely for purposes reasonably related to the development of information for submission to the FDA.[146] However, Classen claimed the defense was inapplicable in this case because the drugs had already received FDA approval.[147] The court agreed with Biogen and GSK and dismissed the claims for infringement, stating "[b]ecause their alleged participation in a study evaluating risks associated with various vaccination schedules was reasonably related to the development and submission of information required under the Federal Food, Drug, and Cosmetic Act, GSK and Biogen's motion to dismiss . . . will be granted."[148]

The court in *Classen* focused on the "reasonably related" requirement of the safe harbor exception while the court in *Proveris* focused on the legislative intent. Because the drugs that were being tested in *Classen* had already received FDA approval, there would have been no problem with the *de facto* patent term extension. The technology in Classen's patents was meant to be research tools and because Biogen and GSK were able to use the patented technology without licensing it, revenue that Classen should have obtained was lost. This is exactly the kind of outcome that the decisions in both *Madey* and *Proveris* tried to avoid. Even though GSK and Biogen were preparing information for the FDA, they could have licensed the technology from Classen in order to perform the experiments. The type of experimentation was not to seek FDA approval so that they could compete with Classen's product on the market the moment their patents had expired. Therefore, the intent of the legislature seems to have been lost in this decision.

In another example, *Amgen, Inc. v. Roche Holding LTD*, Amgen accused Roche of infringement because Roche was importing certain recombinant human erythropoietin and derivatives thereof (EPO) in the United States from Europe.[149] Amgen is the owner of a family of patents for the "EPO" compounds and their production.[150] They claimed that Roche's manufacture of these compounds in Europe was covered by one or more of their claims within these patents and therefore Roche should not be allowed to import them into the country.[151] Amgen brought their

---

146. *Id.*

147. *Id.* at 455.

148. *Id.* at 456.

149. 565 F.3d 846, 847 (Fed. Cir. 2009).

150. *Id.* at 1345.

151. *Id.*; Preventing the importation of products covered by a patent owners patent is one of the rights granted to a patent holder under 35 U.S.C. *See* 35 U.S.C. § 271(a). The patent holder does not have a right to enforce a U.S. patent in foreign countries but can prevent that

complaint to the Federal Trade Commission under Section 337 of the Tariff Act of 1930.[152] In response, Roche claimed that their importation of the EPO was exempt from infringement under § 271(e)(1) because the EPO was used for the purposes of development and submission of information to the FDA.[153] The Commission granted Roche's motion for nominal infringement on these grounds and Amgen appealed.[154]

On appeal, Amgen argued that at least some of Roche's activities were not exempt from infringement under the safe harbor statute.[155] Amgen stated that they did not bring this action until after Roche had completed its submission of information to the FDA.[156] By then, Roche had entered the post Biologics License Application (BLA) stage in which complete data have been received and analyzed by the FDA.[157] Amgen argued further that by the time they had brought this action, Roche had shifted its attention in the United States to analysis experiments, market-seeding trials, and litigation-related activity; activities that should not be exempt from infringement under the safe harbor statue.[158]

The Court of Appeals for the Federal Circuit stated that, "[t]he Commission appears to have assumed that all otherwise infringing activities are exempt if conducted during the period before regulatory approval is granted. That assumption is incorrect . . . ."[159] The court cited the rule in *Merck* that requires each of the activities to be evaluated separately to determine whether the exemption applies.[160] The court continued by stating, "it is apparent that commercial and marketing studies are more clearly subject to separate evaluation for application of the exemption."[161] The court remanded the case to the Commission to consider the exempt status of each study for which the question of infringement had reasonably been raised.[162]

On remand, if the facts indicate that Roche's studies were not for the development and submission of information to the FDA, then Roche should be prohibited from importing their infringing EPO into the United States. To decide that studies performed were exempt from infringement under § 271(e)(1) simply because they were performed

---

product from being imported into the United States. *See id.*

152. Amgen, Inc. v. Int'l Trade Comm'n 565 F.3d 846, 848 (Fed. Cir. 2009).
153. *Id.*
154. *Id.*
155. *Id.* at 850.
156. *Id.*
157. *Id.*
158. *Id.*
159. *Id.* at 852.
160. *Id.*
161. *Id.*
162. *Id.* at 855.

before FDA approval was granted would be clearly contrary to legislative intent.[163] Such a decision would also seem contrary to the decision in *Roche*.[164] Even in *Merck*, the court recognized that the information had to be for submission to the FDA.[165] To decide anything contrary would be to create an even broader infringement exception under the safe harbor statue than the one created by *Merck* and most likely contrary to Congressional intent. However, both these cases demonstrate the problems courts face in interpreting the safe harbor provision in light of the ambiguous decision in *Merck*. Congressional clarification is needed to prevent further confusion and inconsistent decisions.

C.   Did Proveris Do Enough: The Implication of an Overly Broad Research Exception

The biotechnology industry that is most affected by the safe harbor statute is a robust industry that actively contributes to the U.S. economy.[166] Biotechnology companies are also the leading area of innovation in science and medicine which can drastically increase the quality of life for not only American citizens, but globally as well.[167] On the economic side, American biotech companies produced over $39 billion dollars in total revenue in 2003.[168] In addition, biotech companies employ over 200,000 workers, skilled and unskilled, as well as attract venture capitalists and investors.[169] It is clear to see that biotech companies are an integral part of the American economy and way of life.

However, this benefit does not come cheaply. It now costs an average of $800 million dollars to develop a new pharmaceutical.[170] In addition, only 22% of compounds that enter clinical trials will ever receive FDA approval, and even fewer will ever reach the market place.[171] Research tools also take a large amount of time and money in order to develop new technology. Advancement in this area can dramatically aid in the ongoing research into new pharmaceuticals, and therefore it is important to incentivize ongoing advancement in this area.[172] The better the research tools are, the better and more efficiently research can be performed. However, given the large cost and lengthy amount of time it

---

163. *See* H.R. REP. NO. 98-857, at 8 (1984).

164. *See* Merck KGaA v. Integra Lifesciences I, Ltd., 545 U.S. 193 (2006).

165. *See id.*

166. Rothwell, *supra* note 101, at 155.

167. *Id.*

168. S. Sivakumar, *The Economics of Biotechnology*, REDIFF, Sept. 8, 2004, http://www.rediff.com/money/2003/sep/08guest2.htm.

169. *Id.*

170. *Id.*

171. *Id.*

172. *See* Freschi, *supra* note 19.

takes to develop new drugs, biotech companies place a large amount of importance upon patentability of potential technology.[173] Biotech companies rely on the monopoly of the market that is granted with a patent in order to make a profit and legitimize the large amount of time and money spent on development.[174] In addition, many biotech companies, especially research tool companies, receive a large amount of revenue through licensing their technology to others.[175] Without the monopoly protection that patents provide, the licensing revenue could not be realized.[176]

On the other hand, generic versions of drugs do play some importance in the market place.[177] After giving the original inventor a monopoly for a limited time, generic drugs can increase competition and therefore drive the cost of pharmaceuticals down, making them more affordable to health care providers and the general public.[178] Congress realized the importance of generic drugs when deciding to enact § 271(e)(1) into law. It was important to allow a generic drug to enter the market immediately upon expiration of the patent in order to compete once the monopoly granted to the patent holder is over.[179] This is why limited amounts of research can be done on generic drugs in order to receive FDA approval, and why this type of activity is exempt from infringement under the safe harbor statute.[180]

However, generic versions of drugs are much less costly to develop since most of the work in developing the drug has been done, and disclosed, by the patent holder.[181] This is the main reason why generic drugs can be placed on the market for a lower price than the original and still realize a profit.[182] In finding the correct balance between monopoly and economy, the two competing ideologies of allowing a patent holder to realize the profits from time and money spent developing new technology and competition in the market place to keep prices down need to be balanced. However, it is Congress's job to do the balancing. In their role as policy makers, congress decided that a small exception to infringement was necessary but it was important for the impact to be small.[183] Therefore congress concluded that while it is important to allow

---

173. Rothwell, *supra* note 101.

174. *See id.*

175. Freschi, *supra* note 19, at 895.

176. *See id.*

177. Matthew Avery, *Continuing Abuse of the Hatch-Waxman Act by Pharmaceutical Patent Holders and the Failure of the 2003 Amendments*, 60 HASTINGS L.F. 171, 172 (2008).

178. *Id.*

179. *Id.*

180. *See* Ford, *supra* note 27.

181. Savakumar, *supra* note 168.

182. *Id.*

183. *See* H.R. REP. NO. 98-857, at 8 (1984).

generic drugs to enter the market to eventually lower prices, it would be unjust to allow the generic manufacture to enter the market before the patentee's term expired or participate in activity that were not directly related to development of information for submission to the FDA. Both activities eat away at the profits promised to the patentee in exchange for full disclosure of the invention.

Unfortunately, the broad infringement exception that the decision in *Merck* created also had the effect of reducing the value of a biotech patent and taking away revenue that should belong to the patent holder.[184] By allowing competing companies to take part in activities that Congress did not intend to be exempt under the safe harbor statute, licensing revenue that should go to the patent holder was dramatically reduced if not eliminated.[185] And because patent holders no longer have the right to prevent these activities, the value of their patents is reduced. Even if such a large exception to infringement were intended by the legislature, the ambiguous decision in *Merck* still left a lot of questions about what types of activities actually fit within the exception.[186] These ambiguities in patent protection weigh heavily upon the direction and development of technology in the biotechnology industry.[187]

Research tools seem to be effected even more by a broad reading of the safe harbor statute.[188] Research tool patents primarily get their worth from licensing revenue.[189] If a researcher wants to use the newest technology in research tools, this technology has to first be licensed from the patent holder. However, if researchers can use research tools in development of information for submission to the FDA, a large amount of licensing revenue will be lost.[190] Although *Proveris* suggests that the exception will not apply to research tools that are not themselves subject to FDA approval, there still remains a question as to how much this decision will be able to protect the value of research tool patents.[191]

D.   *Proposal for Reformation*

Due to the large amount of confusion and complaints that resulted from the decision in *Merck*, it is clear that some form of reformation of the statute is needed. The first step is for Congress to clarify how far the exception to infringement under § 271(e)(1) should go. Legislation that

---

184. *See* Rockwell, *supra* note 101.

185. *Id.*

186. Ford, *supra* note 27.

187. Rockwell, *supra* note 101.

188. Freschi, *supra* note 19, at 895.

189. *Id.*

190. *Id.*; *see also* Prinz zu Waldeck und Pyrmont *supra* note 13, at 380.

191. *See* Proveris Scientific Corp v. Innovasystems, Inc., 536 F.3d 1256 (Fed. Cir. 2008).

continues to allow generic drug manufactures to perform research for development and submission of information to the FDA is crucial. However, Congress needs to specify what type of activities fall within this exception. To preserve the value of patents and to continue to incentivize research, it would be best to limit activities to the development of information for direct FDA approval. Therefore, research performed after all information has been submitted to the FDA, but before approval is granted, should not be exempt. In addition, research done before actual testing of a generic drug, or early drug stage development, should also not be exempt from infringement. However, Congress should also make it clear that "patented invention" includes any invention that would be subject to Federal Approval before entering the market place.

With respect to research tools, Congress should make it clear that this exception does not apply to research tools, even if the tool is being used in the development and submission of information to the FDA. Research tools depend almost completely on license revenue and to allow use of these inventions without compensation completely reduces their value. In addition, Congress should make it clear that the exception does not apply to the use of an invention that is not subject to FDA approval, no matter why it is being used.

Finally, courts should make a concerted effort to apply the protection provided by the safe harbor statue conservatively. This will help to protect the value of patents and promote the policies behind granting patents. In addition, the safe harbor statute should be applied by interpreting its face value but also by keeping the legislative intent of the statute in mind.

CONCLUSION

In the wake of *Merck* and *Proveris*, one is left wondering exactly how far the safe harbor statute extends. It is clear that a generic manufacturer can begin research of the competing invention before the end of the patent term in order to receive FDA approval. This was clearly Congress's intention. But what other types of activities are exempt from infringement? Pre-FDA approval experiments? Use of patented research tools in the development of information for the FDA on a pharmaceutical? It is not clear that Congress intended the safe harbor statute to protect these types of activities. However, the broad ruling in *Merck* makes it unclear whether patent holders could prevent these types of activities. Although *Proveris* attempted to set a limit, this upper bound is not as helpful for all the activities left in between. The only thing that is clear is that more clarification from Congress is needed in order to resolve the question.

TIME FOR A CHANGE:

THE SCHEMA OF CONTRACT IN THE DIGITAL ERA

BY DEVIN LOOIJEN*

---

* J.D. Candidate, University of Colorado (2010).

INTRODUCTION: A TRADITIONAL SCHEMA OF CONTRACTING

Two businessmen enter a room. Wearing formal suits, they exchange a brief handshake, set their briefcases down, and sit at a table. They roll up their sleeves and begin to exchange words. The tones of their voices alternate rhythmically from excited, to angry, to conciliatory and back again. They hem and haw over small details and large sums, questions of quality and delivery, and, inevitably, the money that is to change hands. Over a series of hours, the gruff words begin to soften, and the negotiations slowly take on the form of an agreement. Soon enough, the room is silent except for the sound of pen on paper as terms are drawn up. At long last, the men sign the papers, stand up from the table, shake hands firmly one last time, and leave the building.

For many, the scenario above is a quintessential mental picture of what it means to contract. Two autonomous, reasoned individuals come together in a meeting of the minds to craft an agreement. Each party has something valuable to offer the other, and both benefit from the exchange. Unfortunately, in the digital era, this example of contracting—consisting of a bargained-for exchange and a meeting of the minds—can be dangerously misleading. The assumptions, sympathies, and goals engendered by such thinking create a divergence between the traditional schema[1] of contractual analysis and the reality of digital-era transactions.[2] The common-law era schema of contractual analysis,[3] while not explicit in many of today's court decisions, nevertheless influences the thinking of legal professionals. This schema brings with it a number of assumptions that are outdated and implausible when applied to digital-era transactions, yet these assumptions maintain unwarranted influence in the courtroom.[4] To ensure that digital-era transactions are not rubber-stamped with the binding authority of traditional contracts, courts must pay careful attention to the underlying reasons why written contracts have been historically binding, and place greater emphasis upon equitable principles of fair dealing.

Many authors have attacked adhesion contracts, click-through

---

1. Schemas are mental categories for sorting information. *See infra* Section I.

2. Within this Note, the term "digital-era transaction" does not include all modern contracts. Instead, it is convenient shorthand for the numerous End User License Agreements (EULAs), Terms of Service Agreements, and Conditions of Use Agreements that populate the web, and the ubiquitous non-negotiable, mutable service contracts that exist in the consumer market. In particular, this term targets agreements that provide services for *de minimis* consideration.

3. Here, the term "common-law era schema" indicates a historical schema of contracts that formed (and still forms) the underpinning of American contractual analysis, a schema that dates back to early English history and times before.

4. *See infra* notes 92–95. For a discussion of relevant cases, see infra Section V.

agreements, and "shrinkwrap" terms prevalent in software.[5] However, few scholars have recognized that today's schema of written contracts, resting upon antiquated concepts, needs change. The schema of contractual analysis must be refocused to take into account the degree of forethought, preparation, and seriousness of the parties involved in digital-era transactions.

In Section I of this Note, I address the role of schemas and cognitive models in life and legal reasoning. Section II focuses upon the basis of the historical assumptions that guide today's schema of contract. Section III explores the cultural and technological changes that have distanced the culture of today from that of the distant past. Section IV explains why the common-law era schema of contract no longer applies to modern scenarios of contracting. Finally, in Section V, I propose increased judicial scrutiny as a solution to this problem.

I.   AN INTRODUCTION TO COGNITIVE MODELS

A cognitive model is a simplified concept of a real process or object, consisting of an organization of concepts and beliefs.[6] Cognitive models are grounded in schemas, which are stereotyped sets of assumptions about actors, environments, and the way the world works.[7] Schemas are neither intrinsically good nor bad, they are merely cognitive tools offering a trade-off. Schemas provide an efficient framework for information processing in exchange for a set of assumptions about a situation that may or may not be true.[8] For example, a simple schema for a dinner table could involve glasses, plates, knives, forks, and napkins for each diner at the table. In most situations, this schema is a comfortable mental grouping that allows one to quickly set the table without wasted thought.[9] However, the schema may quickly become inapplicable. If steak is served for dinner, special knives may be required. If sushi is on the menu, chopsticks will be necessary. The concepts within each schema are associated with each other, such that the thought of one draws up the other. Sharon Widmayer of George Mason University describes the situation thus:

---

5. For example, critics have noted that the silent-acceptance, "terms later" rules of many digital-era transactions encourages rent-seeking behavior by the party drafting the agreement. Critics have also hounded Judge Easterbrook for his decisions on the topic. For a detailed discussion, see Roger C. Bern, *"Terms Later" Contracting: Bad Economics, Bad Morals, and a Bad Idea for a Uniform Law, Judge Easterbrook Notwithstanding*, 12 J.L. & POL'Y 641 (2004).

6. *See*, *e.g.*, H. ANDREW MICHENER ET AL., SOCIAL PSYCHOLOGY 12 (5th ed. 2004).

7. *Id.* at 12–13.

8. SHARON ALAYNE WIDMEYER, SCHEMA THEORY: AN INTRODUCTION, http://www2.yk.psu.edu/~jlg18/506/SchemaTheory.pdf.

9. *See generally* MICHENER ET AL., *supra* note 6, at 13.

> Information that does not fit into [a] schema may not be comprehended [at all], or may not be comprehended correctly. This is the reason why readers have a difficult time comprehending a text on a subject they are not familiar with even if the person comprehends the meaning of the individual words in the passage.[10]

Schemas overlap, change with the passage of time, and interact in complex ways. Cognitive models and schemas form the basis of all legal reasoning. They are pervasive in the way that atoms are pervasive—existing everywhere, yet invisible to the naked eye. While schemas vary from person to person, they maintain a central, unifying, and cohesive core.[11]

In American jurisprudence, lawyers have similar schemas for many legal concepts because lawyers draw from the same cases and statutes to illustrate legal concepts. The "reasonable man" of criminal law and torts, the difference between criminal intent and criminal negligence, the definitions of "unconscionable" and "public policy" in contracts cases, all are defined by schemas. For example, in torts, *Palsgraf* fleshes out the schema for proximate causation.[12] Legal schemas therefore powerfully frame an advocate's style of thinking, forming the "box" of "in-the-box thinking" that occurs in the legal community.

II.   THE ORIGIN OF THE MODERN SCHEMA OF CONTRACT

Today's schema of contractual analysis is varied and complex, with roots based in theories and philosophies that go back hundreds, if not thousands of years.[13] While the full history of such a topic is beyond the reach of this Note, a brief history of contracts provides an understanding of the foundations of today's schema of contractual analysis.[14]

The power of the written word has historically been unquestionable.[15] In the Middle Ages, books were extremely valuable, labor-intensive objects. Paper, ink, pen, binding, and written script were each crafted by hand. By way of example, even paper itself was crafted by

---

10. WIDMEYER, *supra* note 8.

11. *See* MICHENER ET AL., *supra* note 6, at 335–37 (discussing the impact of group norms on cognitive frames of reference).

12. Palsgraf v. Long Island R.R. Co., 248 N.Y. 339 (N.Y. 1928).

13. *See generally* PAUL HALSALL, ANCIENT HISTORY SOURCEBOOK: A COLLECTION OF CONTRACTS FROM MESOPOTAMIA, C.2300–428 BCE (1999), http://www.fordham.edu/halsall/ancient/mesopotamia-contracts.html.

14. For an in-depth discussion of ancient contracts, see WILLIAM H. BUCKLER, THE ORIGIN AND HISTORY OF CONTRACT IN ROMAN LAW (Cambridge Univ. Press 1895) (noting that "Contract is the handmaid if not actually the child of Trade").

15. Indeed, who can forget Edward Bulwer Lytton's coined phrase, "The Pen is Mightier than the Sword." Baron Edward Bulwer Lytton, RICHELIEU: OR, THE CONSPIRACY 89 (Dodd, Mead & Co. 1896).

a complex, time-consuming process. Linen rags were sorted, washed, fermented for days, cut and beaten over and over again until they formed a pulp that was squeezed, pressed, glued, and cut into sheets.[16] The paper was then polished with a stone to give it sheen.[17] Carefully ruled lines and gilded images transformed each page of these books, even the words themselves, into works of art. The written word was labor intensive, and took the time of skilled, literate craftsmen. This was no small feat for the age.[18] As such, the written word was so precious that its mere existence indicated the application of careful forethought.

Because of the expense of the written word, "the contracts enforced by the civil courts, even as late as Henry II, were few and simple."[19] Writing shrank the size of a given contract due to the scarcity and expense of scribes.[20] The written contract had to epitomize clarity, and each term was written out carefully and succinctly. As such, parties were more likely to completely understand the scope and nature of the agreements they entered into by writing. For thousands of years, this concept held true. For example, a typical ancient Sumerian contract for the sale of real estate was summed up in a mere three sentences describing the thing purchased, its location, and price.[21] With these factors in mind, it is perhaps no surprise that the written word held great influence over the judges of the ancient world who analyzed contracts. In contrast to the spoken word, the written word of ages past was immutable, expensive, and carefully considered. Because of these characteristics, a contract's existence in writing sanctified and froze the terms of important agreements. Courts have historically recognized the power of writing by way of the Statute of Frauds and the Parol Evidence

---

16. VLADIMIR BARANOV, MEDIEVAL MANUSCRIPT MANUAL, Part II, § 3: Paper, http://web.ceu.hu/medstud/manual/MMM/frame5.html (Referencing CHRISTOPHER DE HAMEL, MEDIEVAL CRAFTSMEN: SCRIBES AND ILLUMINATORS (British Museum Press 1992) (last visited Apr. 23, 2010)).

17. *Id.*

18. In the case of a manuscript from the year 1517, the parchment and binding together cost less than a tenth of the cost of its scribes and illustrators. And, as mentioned above, parchment was not cheap. *See* JONATHAN JAMES GRAHAM ALEXANDER, MEDIEVAL ILLUMINATORS AND THEIR METHODS OF WORK 38 (Yale Univ. Press 1992).

19. OLIVER WENDELL HOLMES, JR., THE COMMON LAW 259 (Cosimo Books 2009) (1881).

20. The medieval literacy rate was atrociously low. *See*, *e.g.*, JUDY ANN FORD, JOHN MIRK'S FESTIAL: ORTHODOXY, LOLLARDY AND THE COMMON PEOPLE IN FOURTEENTH-CENTURY ENGLAND 27 (2006) (noting a 14th century literacy rate between 5 and 15 percent).

21. HALSALL, *supra* note 13 ("Sini-Ishtar, the son of Ilu-eribu, and Apil-Ili, his brother, have bought one third Shar of land with a house constructed, next the house of Sini-Ishtar, and next the house of Minani; one third Shar of arable land next the house of Sini-Ishtar, which fronts on the street; the property of Minani, the son of Migrat-Sin, from Minani, the son of Migrat-Sin. They have paid four and a half shekels of silver, the price agreed. Never shall further claim be made, on account of the house of Minani.")

Rule.[22]

Historically, ritual has also played a major role in the formation of contracts. For example, the ritual of stamping a seal upon a written contract indicated the serious, binding consent of the parties.[23] Each party would bring his unique seal to the place of the agreement and then stamp melted wax upon the document or physically stamp the document itself to leave a unique impression.[24] This ritual act required affirmative, considered action on the part of the contracting parties. Oliver Wendell Holmes noted, in his work, *The Common Law*, that:

> [W]hen seals came into use they obviously made the evidence of the charter better, in so far as the seal was more difficult to forge than a stroke of the pen. Seals acquired such importance, that, for a time, a man was bound by his seal, although it was affixed without his consent. At last a seal came to be required, in order that a charter should have its ancient effect.[25]

The seal became such an important legal ritual that it evolved into the concept of consideration in modern contract law. [26]

Rituals like the seal are effective social constructs because they provide a script for behavioral interactions. They focus the attention of the individual upon the act at hand, ensuring certainty and uniformity of purpose among all parties.[27] For example, the ritual of a traditional wedding ceremony focuses the thoughts of the couple onto their relationship, resulting in a powerful emotional and spiritual commitment. By focusing attention, dictating behavior, and activating relevant schemas, rituals ensure the existence of a proper mindset for a given situation.

Rituals predominate the legal system. In the case of the courtroom,

---

22. The Statute of Frauds demands that certain contracts be made in writing to ensure that serious contracts are made with clarity, are immutable, and are the subject of forethought and commitment. For a modern implementation of the Statute of Frauds, see U.C.C. § 2-201 (2005). The Parol Evidence Rule boxes parties into the bounds of their written contract, and ignores evidence outside of it in order to fulfill the same goal—elevating written contracts to a sacred, incontestable level. For a modern implementation of the Parol Evidence Rule, see RESTATEMENT (SECOND) OF CONTRACTS § 213 (1981).

23. Article on "seal," ENCYCLOPÆDIA BRITANNICA ONLINE (2010), http://www.britannica.com/EBchecked/topic/530883/seal.

24. Article on "sigillography," ENCYCLOPÆDIA BRITANNICA ONLINE (2010), http://www.britannica.com/EBchecked/topic/543584/sigillography.

25. HOLMES, *supra* note 19, at 272.

26. *Id.* at 273.

27. According to philosopher Joseph Campbell, rituals "give you an occasion to realize what you're doing so that you're participating [actively in the process]. That's what rituals are for; you do things with intention." Tom Collins, *Mythic Reflections: Thoughts on Myth, Spirit, and Our Times, an Interview with Joseph Campbell*, CONTEXT INST. (1983), http://www.context.org/ICLIB/IC12/Campbell.htm.

the judge, robed in black, commands honor and respect.[28] Her power in the courtroom stems from the fact that her audience acknowledges her as an arbiter of justice.[29] In contracts of old, the legal rituals of the written contract and the seal served as subtextual cues indicating the importance of the agreement. The existence of such devices reminded the parties to take their agreement seriously, and to carefully consider the potential consequences.

Thus, several key characteristics of the common-law era contract set it apart from today's digital-era transactions. The mere existence of a contract in writing had special significance, and seals imbued a sense of seriousness and importance to the transaction. In addition, the requirement that a contract be in writing served to create contracts that were concise and entered into with great forethought. The written word was also the immutable word, memorializing forever the exact terms that parties had agreed to. These historic properties of the written word, and the ritual nature of contracting, served to strongly enforce a schema that regarded writing as an indicator of a profoundly binding agreement. The next section of this Note describes how digital-era transactions often lack these traditional characteristics, making the common-law era schema of contracts ill-suited to analyze digital-era transactions.

III.   CHANGES IN CULTURE HAVE TRANSFORMED THE WRITTEN WORD

Today's world has changed dramatically from the historic common-law era. In particular, the value of the written word has undergone a profound and permanent transformation since the common-law era of contracts. First, the cost of paper in the digital era has been drastically reduced. In the physical world, writing is ubiquitous, available for mass consumption, and cheap enough that it often gets thrown out after reading. Newspapers and mass-printed books have brought the written word of famous authors and trusted reporters to the masses. Words are cheap, and they are everywhere. With the advent of the typewriter and the copy machine, anyone could write and publish at speeds unimagined by those of ages past. These advances allowed authors to write fast enough to keep up with their streams of conscious thought. As a case in point, Jack Kerouac's book *On the Road*, written in 1957, was typed in a blistering three weeks.[30] The written word began to embrace emotions, actions, and longings no more fleeting than a passing thought.

---

28. JOSEPH CAMPBELL, THE POWER OF MYTH 14 (1991).

29. For example, a child could don a judge's robes and make proclamations from the bench, but few people would follow her commands.

30. Ann Charters, *Introduction* to JACK KEROUAC, ON THE ROAD vii (Penguin Books 2002).

Therefore, written words came to represent not just careful argumentation, forethought, and studied research, but also the random musings of the common man.[31]

The culture of the well reasoned, carefully considered word was celebrated by media theorist Neil Postman in his work, *Amusing Ourselves to Death*.[32] Postman argued for the rejection of television and a return to the written word, claiming that such a revival would usher in a return to a typographic mindset—a culture of carefully considered and selected prose.[33] However, Postman believed that the written word, in and of itself, was what brought about the typographic mindset.[34] What he failed to grasp was the reason *why* the written word originally inspired the typographic mindset. Before the age of the typewriter, it was important for an author to carefully craft her argument in her head before transcribing it to paper. An author would have to hold a large set of concepts in his mind's eye, revise them, and rehearse them before putting prose down on paper. Postman's world of the typographic mind failed to re-appear with the coming of the Internet[35] because the Internet is not a return to carefully written words, but rather a phenomenon that embraces and adopts writing in all forms.

In the digital era, words have come to represent scattered thoughts more than ever before.[36] The electronic age allows users to transcribe their thoughts seamlessly to the screen. User services such as Twitter encourage the denizens of the Internet to write down each and every happening of their day, in bursts of 140 characters at a time.[37] At the same time, blogs and social networking sites encourage users to write about anything and everything that may come to mind.[38] As such, the presentation of words in written form has lost the ritual significance it used to convey. A word presented on the screen is no more sacred than a word spoken in passing. In contrast, in the ancient world, the mere

---

31. *See infra* note 36.

32. *See* Neil Postman, Amusing Ourselves to Death: Public Discourse in the Age of Show Business (2006). Neil Postman wrote a number of books describing the role of media in American life. *See generally* The Neil Postman Information Page, http://www.neilpostman.org/ (last visited Mar. 24, 2010).

33. *See* Postman, *supra* note 32, at 49–52.

34. Postman was famous for coining the phrase "the medium is the metaphor." *See*, *e.g.*, *id.* at 13–15.

35. The Internet is primarily a written medium. *See, e.g.,* Mark Dykeman, *The Effect of the Internet on Reading Habits*," Helium, http://www.helium.com/items/567377-the-effect-of-the-internet-on-reading-habits (last visited Apr. 22, 2010).

36. The rise of the blogosphere has provided each and every Internet user with a personal soapbox from which to speak. *See Measuring the Blogosphere*, N.Y. Times, Aug. 5, 2005 at A14.

37. *See* About Twitter, http://twitter.com/about (last visited Mar. 24, 2010).

38. *See*, *e.g.*, Blogger, https://www.blogger.com/start (last visited Mar. 24, 2010); WordPress, http://wordpress.org/ (last visited Mar. 24, 2010).

existence of words in writing indicated their importance.

The written word of the digital era is also vastly different than the traditional written word because it is *mutable*. Courts have given great deference to the written contract because writings have historically been immutable documents. Written agreements froze the negotiations of the parties, crystallizing a set of terms that both parties explicitly agreed to. In contrast, in the digital era, words posted on websites can flow and change like water—and they do. Perhaps no site exemplifies this principle more than Wikipedia.[39] Hosting more than 2.5 million user-created articles in English alone,[40] Wikipedia's encyclopedic entries are constantly transformed as users strive to achieve the most accurate and thorough description possible.[41] As a case in point, the Wikipedia entry on "Marmalade" was altered seventy five times over a ten-month span.[42]

It comes as no surprise that countless popular websites of the day have adopted the same mutability in their terms of service.[43] Google states that it will change its terms of service without notice to its users,[44] while Yahoo says it "may" provide notices of such changes.[45] Apple "reserves the right . . . to impose new or additional rules,"[46] and Facebook has previously reserved the right to change the terms of its user agreement at its own "sole discretion . . . without further notice."[47] Not

---

39. *See* Wikipedia.org, http://www.wikipedia.org/ (last visited Oct. 9, 2008).

40. *Id.*

41. *See* Wikipedia, http://en.wikipedia.org/wiki/Wikipedia (last visited Oct. 9, 2008).

42. *See* Revision History of Marmalade, Wikipedia.org, http://en.wikipedia.org/w/index.php?title=Marmalade&action=history (Jan.-Oct. 2008).

43. *See, e.g.*, Google Terms of Service, http://www.google.com/accounts/TOS (last visited Oct. 9, 2008) ("You acknowledge and agree that the form and nature of the Services which Google provides may change from time to time without prior notice to you."); Yahoo! Terms of Service, http://info.yahoo.com/legal/us/yahoo/utos/utos-173.html (last visited Oct. 9, 2008) ("Yahoo! may provide you with notices, including those regarding changes to the TOS . . . ."); Second Life Terms of Service, http://secondlife.com/corporate/tos.php (last visited Oct. 9, 2008) ("Linden Lab may amend this Agreement at any time in its sole discretion . . . ."); Facebook Terms of Use, http://www.facebook.com/terms.php (July 19, 2008) ("We reserve the right, at our sole discretion, to change, modify, add, or delete portions of these Terms of Use at any time without further notice."); Apple, iTunes store—Terms of Service, http://www.apple.com/legal/itunes/us/service.html (last visited Oct. 9,2008) ("Apple reserves the right, at any time and from time to time, to update, revise, supplement, and otherwise modify this Agreement and to impose new or additional rules, policies, terms, or conditions on your use of the Service."); America Online, AIM Terms of Service, http://www.aim.com/tos/tos.adp (last visited Oct. 9, 2008) ("AOL may change the Terms of Service at any time and in its sole discretion."); LiveJournal, Terms of Service, http://www.livejournal.com/legal/tos.bml (last visited Oct. 9,2008) ("The manner, mode and extent of advertising by LiveJournal on your Content and throughout the Service are subject to change at LiveJournal's discretion.").

44. Google Terms of Service, *supra* note 43.

45. Supposing it cares to provide such notice. Yahoo! Terms of Service, *supra* note 43.

46. Apple, *supra* note 43.

47. Facebook Terms of Use, *supra* note 43 ("We reserve the right, at our sole discretion, to change, modify, add, or delete portions of these Terms of Use at any time without further

only do these agreements place unilateral power to modify the transaction solely into the hands of the service provider, they often go so far as to allow these changes to be made without notice to users.[48] These "submarine" agreements lurk beneath a consumer's awareness, yet may suddenly change terms dramatically, going against consumer expectations of privacy[49] or ownership.[50] Such agreements, allowing unilateral changes without notice, are by no means restricted to *de minimis* terms of service agreements.[51]

In the digital world, the devaluation of the written word has transformed text into a fluid, mutable, easy-to-create and easy-to-discard commodity. While this transformation creates a benefit by increasing the flow of information, it also devalues the binding power of the written word. It is not that the written word has suddenly become devoid of all meaning, or that no contract should be taken seriously in today's world. Rather, the written word has moved away from being something that *in and of itself* symbolizes careful consideration, seriousness, forethought and planning in an agreement. Instead, the written word now often exists merely as another form of the spoken word—unrehearsed and informal.[52] Thus, the mere existence of a contract *in writing* no longer prepares an individual to take the agreement seriously. Instead, more explicit cues, such as up-front financial expense, the presence of a lawyer, and the actual process of negotiation are now required to make a party carefully consider the terms of an agreement.[53]

---

notice.").

48. *Id.*

49. Consider the consumer outrage over Facebook.com's "Beacon" application (no longer in operation), which acquired user information from third party websites and displayed that information on Facebook, without informing users. *See* Juan Carlos Perez, *Facebook's Beacon More Intrusive Than Previously Thought*, PC WORLD, Nov. 30, 2007, http://www.pcworld.com/article/140182/facebooks_beacon_more_intrusive_than_previously_t hought.html. Here, consumer expectations of privacy were violated *despite* Beacon remaining within the scope of Facebook's terms of service. *Id.*

50. Reserving the right to unilaterally expand licensing rights to user-generated content allows one to acquire massive amounts of content at no cost. As a case in point, consider that Facebook recently attempted to change its terms of service, expanding its licenses to include content from deleted users' accounts. *See* Caroline McCarthy, *Facebook: Relax, We Won't Sell Your Photos*, CNET NEWS, Feb. 16, 2009, http://news.cnet.com/8301-13577_3-10165190-36.html. Facebook would have thereby acquired a perpetual license for all user content ever posted on the site. *Id.* With a single "submarine" attack, Facebook attempted to acquire billions of pieces of user content at no cost. *Id.* (As a rough calculation, Facebook had approximately 100 million users at the time, *see infra*, note 110, if each Facebook user had only ten pieces of user-generated content, the change in terms would have affected at least a billion pieces of user content.)

51. *See infra* Section IV-A (discussing the terms of service for Amazon.com and Verizon).

52. A casual glance at the text messaging history of most cellular phones, chat rooms, or instant-messaging programs illustrates this point.

53. *See generally* Robert A. Hillman & Jeffrey J. Rachlinski, *Standard-Form Contracting in*

Thus, the written word has undergone a fundamental transformation. In the common-law era, contracts were concise. In the digital era, agreements for even minimal services are thousands of words long.[54] In the ancient world, contracts had ritual significance that indicated intent to be bound. In the digital era, the typical Internet user may not even know that they are bound by a contract-like agreement. In the ancient world, written contracts were immutable. In the digital era, written agreements change constantly, even after they have been agreed to. Despite these many differences, courts still predominately evaluate digital-era transactions using the common-law era schema of contractual analysis.[55]

IV. FLAWS IN THE CURRENT COGNITIVE SCHEMA OF CONTRACT STEMMING FROM CHANGES IN THE WRITTEN WORD

Schemas for contractual analysis are effective tools because they allow judges and lawyers to analyze complex fact patterns quickly and efficiently. For example, when a legal professional hears the word "consideration," it may conjure up a number of factors, tests, and definitions for evaluating a legal scenario. Although these evaluative tools can be helpful, on occasion they require maintenance to scrub away the detritus of years past. This section discusses how the common-law era schema of contract creates inherent assumptions about contracting parties that can be misleading in today's world, especially for digital-era transactions. Therefore, when a judge or legal professional analyzes a digital-era transaction, the activated schema may be rooted in an antiquated contracting scenario, one that is largely inapplicable today.[56]

A.   Writing No Longer Indicates a Concise, Immutable Agreement

The ever-present "terms of service" agreement,[57] common on websites, is one example where the application of the common-law era schema of contractual analysis can be anachronistic. These agreements are both ubiquitous and lengthy. They can be found on social networking sites such as MySpace (5,307 words),[58] photo sharing websites like Picasa

---

the Electronic Age, 77 N.Y.U. L. REV. 429 (2002) (discussing circumstances in which consumers read contractual terms and those in which they do not).

54. *See infra* notes 58–60.

55. *See infra* note 92.

56. As Oliver Wendell Holmes noted of the common-law tradition: "It seems strange that this crude product of the infancy of law should have any importance for us at the present time. Yet whenever we trace a leading doctrine of substantive law far enough back, we are very likely to find some forgotten circumstance of procedure at its source." HOLMES, *supra* note 19, at 253. Justice Holmes' words ring true in the digital era as well.

57. Terms of Service Agreements are often "submarine" contracts. *See supra* note 43.

58. MySpace.com Terms of Use Agreement, June 25, 2009, http://www.myspace.com/

(4,223 words),[59] and banking websites such as Bank of America (in Colorado, 16,131 words).[60] Even "World of Warcraft," an online videogame, has a lengthy legal agreement articulating the terms of use (4,712 words).[61] These agreements also include clauses that allow the service provider to change its terms at any time, without the consent of the end-user.[62] Unquestionably, these types of agreements are common in the digital era.[63]

When compared with common-law era written contracts, terms of service agreements differ in several ways. First, these agreements are akin to adhesion contracts[64] because they are non-negotiable, take-it or leave-it agreements. As such, they demand that any potential user relinquish her right to a bargained-for exchange in the classical sense of contracting. Additionally, these agreements are subject to change at the will of the contract drafter, at any time and for any reason, without the consent of the other party. Therefore, these agreements can be used as "submarine" contracts, waiting to strike the consumer at any time with the implementation of harsh terms.

On websites, terms of service agreements work essentially like this: a website offers services such as photo-sharing or social networking. Internet users who visit the site provide consideration by bringing advertising revenue to companies that host the sites.[65] Terms of service are either displayed on one of the website's pages, or exist as a prerequisite to creating a user account. These agreements are at the

---

index.cfm?fuseaction=misc.terms (5,307 words). MySpace, as of 2006, had more than 67 million members. *See* Dawn Kawamoto & Greg Sandoval, *MySpace Growth Continues Amid Criticism*, CNET NEWS, Mar. 31, 2006, http://news.cnet.com/MySpace-growth-continues-amid-criticism/2100-1025_3-6056580.html.

59. Picasa, Google Terms of Service, Apr. 16, 2007, http://google.com/accounts/TOS?hl=US (4,223 words).

60. Bank of America, Online Banking Service Agreement [for Colorado], Oct. 2, 2009, http://www.bankofamerica.com/onlinebanking/index.cfm?template=service_agreement&statecheck=CO (16,131 words). Bank of America has over 21 million online users. John R. Quain, *Cellphone Banking Is Coming of Age*, N.Y. TIMES, May 24, 2007, http://www.nytimes.com/2007/05/24/technology/24basics.html.

61. World of Warcraft, Terms of Use Agreement, July 19, 2008, http://www.worldofwarcraft.com/legal/termsofuse.html (4,712 words); Press Release, Blizzard Entertainment, World of Warcraft: Wrath of the Lich King In Stores Starting November 13, 2008, http://us.blizzard.com/en-us/company/press/pressreleases.html?080915 (Blizzard notes this massive multiplayer online community hosts 10.9 million active users).

62. *See supra* notes 58–60, 62.

63. *See id.*

64. For the paper that first defined adhesion contracts, *see* Edwin W. Patterson, *The Delivery of a Life-Insurance Policy*, 33 HARV. L. REV. 198 (1919–20).

65. For example, consider Google, which states "[w]ith superior search technology and a high volume of traffic at its Google.com site, Google's managers identified two initial opportunities for generating revenue: search services and advertising." Google Corporate Information: Business Overview, http://www.google.com/corporate/business.html (last visited Apr. 22, 2010).

boundaries of contract law because they offer to provide digital services,[66] but user consent must be inferred,[67] and there is only *de minimis* consideration.[68] In this manner, these agreements *seem* to fit within the historic schema of common-law era written contracts—a schema that gives undue importance to a contract's existence in writing.[69] However, when one looks past the rigid application of writing as a stand-in for assent, the acceptance of the parties is ambiguous at best.

Unilateral, mutable contracts assault the very reasons why written contracts were binding in the common-law era—written contracts used to be immutable, clear, precise, and agreed-to by both parties. Additionally, clause that make contracts mutable require users to re-read, interpret, and analyze the entire contract every time they visit the site, or risk unknown liability. If someone read the terms of service for just the four sites described above on a daily basis, they would need to interpret 30,373 words of convoluted legalese per day just to keep appraised of the changing legal obligations.[70] In contrast, the original Constitution, the keystone of the entire American legal system, weighs in at a mere 4,609 words.[71]

Agreements allowing unilateral changes without notice are by no means restricted to *de minimis* terms of service agreements. Amazon.com reserves the right to make unilateral changes to auctions already in-progress on its site.[72] Verizon's cellular plans charge an early termination

---

66. Such as the hosting of a photograph online. *See, e.g.*, Flickr, www.flickr.com (last visited Apr. 22, 2010).

67. Often via "browsewrap" or "clickwrap" agreements, wherein the click of a mouse substitutes for binding consent to a plethora of terms. For example, Flickr utilizes a browsewrap style of agreement. *See id.* While Microsoft's Internet explorer uses a clickwrap agreement. *See* Microsoft Internet Explorer, http://www.microsoft.com/Windows/internet-explorer/ (last visited March 29, 2010) (Proceeding through the install process leads to the clickwrap agreement).

68. For example, the consumer's use of the website may provide another "eyeball" to drive advertising revenue on the website.

69. To illustrate the power of the written contract, consider how a contract's mere existence in writing can make its terms become binding *regardless* of whether the drafting party ever provides the contract to the other party. *See, e.g.*, Schwartz v. Comcast Corp., 256 F. App'x 515, 518 (3d Cir. 2007) (concluding as a matter of law that a man who never received the terms of an adhesion contract, nevertheless, was bound to the entirety of the contract's terms because "where an offer is contained in a writing [a party] may, without reading the writing, manifest assent to it and bind himself without knowing its terms" (quoting RESTATEMENT (SECOND) OF CONTRACTS § 23 (1981)).

70. *See supra* notes 58–60, 62. This word count does not include the websites' separate *privacy* policies.

71. These agreements are several times larger than the size of the original version of the U.S. Constitution. *See* U.S. CONST. (as originally enacted), *available at* The National Archives, The U.S. Constitution, http://www.archives.gov/exhibits/charters/constitution_transcript.html (last visited Apr. 22, 2010).

72. *See* Amazon.com, Conditions of Use, http://www.amazon.com/gp/help/customer/display.html?ie=UTF8&nodeId=508088 (last visited Feb. 2, 2009) ("We reserve the right to

fee if a subscriber cancels a plan before two years of service, yet also state that Verizon can "change prices or any other term of your Service or this agreement at any time" via written notice."[73]

In the common-law era, writing indicated clarity and understanding of important terms. In contrast, the service agreements of today's websites are filled with impenetrable legal language that is complex for even a lawyer to understand, let alone a layperson. The expense of the written word used to require terms that were more concise and precise than oral agreements. In a bizarre turn-around, the presentation of information in a textual format now allows service providers to create vastly more complicated, confusing agreements than oral presentation would allow. Furthermore, mutable terms make a contract's existence in writing immaterial, and stymie consumers' attempts to understand the metes and bounds of their obligations. Unfortunately, today's schema for contractual analysis has failed to keep up with these fundamental changes in the nature of the written word.

B.   *Many Digital-Era Transactions are No Longer Bargained-For*

Many digital-era transactions lack a bargained-for exchange; therefore, they bear great similarity to adhesion contracts. When entering into complex agreements for products and services, consumers tend to focus on important terms such as price and quantity and typically assume that remaining terms are meant for unlikely contingencies.[74] Even when consumers read these terms, they are unlikely to understand them.[75] In these situations, any discomfort about unknown terms takes a back seat to the desire or need for the product or service.[76] As an example, many people see their cellular phones as a necessity and enter into complex service agreements, but they are unlikely to exhaustively analyze the accompanying large booklet filled with terms and conditions.[77]

---

make changes to our site, *policies, and these Conditions of Use* at any time.") (emphasis added) (2,452 words).

73. Verizon Wireless, Customer Agreement, http://www.verizonwireless.com/b2c/globalText?textName=CUSTOMER_AGREEMENT&jspName=footer/customerAgreement.jsp (4,996 words) (emphasis in original) (last visited Feb. 2, 2009) (As an exception, customers may opt-out during their first thirty days of service, without an early termination fee; however, Verizon's ability to change contractual terms extends far beyond this trial period.).

74. Hillman & Rachlinski, *supra* note 53, at 446.

75. *Id.*

76. *See id.* at 479–80.

77. As an example of such a terms booklet, consider the "Welcome Kit" booklet that Cingular (now AT&T Wireless) supplied its customers *after* activating service in November 2006. CINGULAR WIRELESS, WELCOME KIT (2006) (on file with author). At the bottom of page fifteen, it reads in large font "Do not return this contract. Retain for your records." *Id.* at 15. Presumably Cingular neither needed, nor wanted, to have it signed.

Additionally, consumers realize that the agents they deal with (be it a customer service representative or website) lack the authority to bargain over terms.[78] The consumer must therefore "take it or leave it." Also, consumers typically see no benefit from shopping for terms because these terms are often uniform across a given industry.[79]

Social pressures often also play a role in encouraging consumers to sign contracts that they do not completely understand. For example, a consumer at the front desk of a car rental agency is unlikely to carefully read the terms of the rental agreement for fear of facing scorn and derision from agents and other customers.[80] Further, reading the terms of form contracts is considered an act of suspicion and distrust.[81] It also holds up the line.[82] This environment induces consumers to contract, even when they don't know the precise terms of an agreement.

Finally, in the digital era of contract, enforcing a marginally valuable contract's aggressive terms may penalize rational consumer behavior. For a digital drafter of terms, individual consumer interactions may be valued at less than a penny, but the overall revenue stream represented by millions of users will be significant.[83] Because the transactions governed by these contracts represent a large income stream, a rational economic digital drafter has the incentive and resources to draft large, complex agreements to govern the activities of users. A rational economic consumer encountering such an agreement is confronted with the opposite scenario. The transaction costs of analyzing such a contract, even without a lawyer, significantly outweigh the potential marginal benefit of the services provided to the individual consumer. Because the transaction costs of interpreting the contract outweigh its potential value, a rational economic consumer must either accept or reject the agreement *without analyzing the contract*. Here, strict enforcement of such contracts penalizes rational economic consumer action.

Consequently, these transactions erase all notion of a bargained-for exchange. Without a bargained-for exchange, these transactions lack one of the key pillars that hold up a written contract's integrity. Despite this problem, today's schema of contractual analysis, using assumptions that stem from antiquated historical scenarios, may make the transaction binding solely because it is in writing.

---

78. Hillman & Rachlinski, *supra* note 53, at 446.

79. *Id.*

80. *See id.* at 448.

81. *Id.*

82. An almost unforgivable sin in modern times.

83. *See infra* note 110.

C.   *Many Digital-Era Transactions are No Longer Ritualized to Ensure Binding Consent*

Instead of the rituals that accompany traditional contracting—the seal of the past, the signing ceremony, or the handshake—no ritual in digital-era transactions activates schemas that ensure careful forethought before providing consent. Users in the online world are surrounded by cues that indicate security, comfort, safety, and instant gratification. This lack of ritual raises serious concerns about the scope of consent at issue in digital-era transactions.

Picture a college student, casually sitting in his pajamas next to the bed late at night, deciding to sign up on Facebook to post pictures of his latest road trip. The site's "terms of service" are meant to govern all of the transactions between Facebook and the user. Undoubtedly, posting photos online is a significant transaction. Intensely personal private information is exchanged for a messaging, posting, and advertising service. If photos posted on the site were to get into the wrong hands, they could arguably harm the student's chances at a job[84] or even lead to identity theft.[85]

Despite the potentially significant consequences of public distribution of the photos, countless cues indicate that users should not take the transaction seriously. First, posting pictures online seems less like a transaction and more like a personal outing with friends online. Next, the user's surroundings and the informality of the situation indicate an aura of comfort and safety. The transaction doesn't take place in an office, which would formalize the event and encourage the student to be on guard. The student also likely fails to comprehend the seriousness of the agreement or even that an agreement has been reached because the other contracting party is not present in person. The student has no chance to inquire about terms, nor any indication that he should do so. Even if these agreements had appropriate cues, users may be multi-tasking at the time of the event. It is not uncommon for users to be listening to music, chatting with a friend online, perhaps talking to a friend on the phone, and browsing multiple websites at the same time.[86] This multitasking environment sharply hinders a user's focus. In a recent study on multitasking, researchers noted that consumers have a limited pool of attention, and when they focus upon one thing, they pay less

---

84. For example, the photographs may indicate unfavorable political affiliations, alcohol consumption, or risk-taking behavior that would prevent an applicant from getting a job.

85. Photographs may inadvertently aid identity theft. For example, these photos may depict: birth dates, license plate numbers, home addresses, and methods of entry into the home, among others.

86. While these behaviors would be unheard-of and insulting in a traditional person-to-person bargained-for contract, they are the norm for many digital-era transactions.

attention to the others.[87] With limited cognitive resources available during casual multi-tasking, it should come as no surprise when a layperson (or even a lawyer)[88] fails to fully comprehend the significance of the provisions of a terms of service agreement.

Of course, the above scenario assumes that our hypothetical user even realizes that a website has terms of service. In the case of Facebook, the home page states, in the smallest size text displayed, "By clicking Sign Up, you are indicating that you have read and agree to the Terms of Use and Privacy Policy."[89] The text is located near the bottom corner of the page in light grey over a light blue background—not obscuring it, but certainly making it harder to notice.[90] In such circumstances, it is unlikely that our hypothetical student would even realize he was agreeing to binding terms, terms that might even lock him out of the courts.[91]

D.   The Break between Today's Schema of Contractual Analysis and Today's Digital-Era Transactions

The "contract" of the digital era often bears little resemblance to the written contracts of times past. Despite this lack of resemblance, some courts have had no qualms about applying the common-law era schema of contractual analysis like a sledgehammer upon unwitting parties.[92]

---

87. Switching focus repeatedly between tasks, as Internet users are apt to do, takes a significant toll on intellectual resources. Lisa De Nike, *Multitasking: You Can't Pay Full Attention to Both Sights and Sounds*, EUREKALERT!, June 21, 2005, http://www.eurekalert.org/pub_releases/2005-06/jhu-myc062105.php; *Is Multitasking More Efficient? Shifting Mental Gears Costs Time, Especially When Shifting to Less Familiar Tasks*, AM. PSYCH. ASSOC., Aug. 5, 2001, http://www.apa.org/releases/multitasking.html.

88. It is exceedingly rare for even attorneys to read these agreements. A recent American Bar Association article noted the following scenario:

> At a recent legal presentation attended by prominent intellectual property lawyers and law professors, a loaded question was posed to the audience: "By a show of hands—and be honest, now—how many of you read the terms and conditions presented in an end-user license agreement [EULA]?" Of the nearly 100 people in the auditorium, not a single hand was raised.

Elizabeth Bowles & Eran Kahana, *The 'Agreement' That Sparked A Storm: A Click-through Goes Bad*, BUS. L. TODAY, Jan.-Feb. 2007, at 55. If the intellectual property attorneys of the world—those intimately familiar with the significance and dangers of abuse inherent in terms of service agreements—fail to even *read* them, is it any surprise that laymen, who would be adrift in a sea of dense legal terms, also neglect to do this? *See generally id.* If it is a well-known fact that nobody, not even lawyers, read these documents, can they really be considered "agreements" having binding consent?

89. Welcome to Facebook!, http://www.facebook.com/ (last visited Oct. 10, 2008) (The text is displayed only after a user enters valid user information and clicks the "sign up" button).

90. *See id.*

91. *See*, *e.g.*, Facebook's terms of use in 2008. Facebook Terms of Use, http://www.facebook.com/terms.php (last visited Oct. 10, 2008) (which described arbitration as the sole and exclusive forum and remedy for all disputes relating to the service provided).

92. *See*, *e.g.*, Davis v. Dell, No. 07-630, 2007 U.S. Dist. LEXIS 94767, at *15 (D.N.J. Dec. 28, 2007) (holding that clicking an "I Agree" button online stands in for binding consent

Courts have historically enforced these contracts because the legal schema of the written contract was iron-plated by principles of mutual assent, immutability, bargained-for exchanges, and the meeting of the minds.[93] Because the foundations of the written contract have eroded gradually, courts have been slow to realize the need for a change in today's schema of contractual analysis.

Some courts have recently changed their view of digital-era transactions to account for some of these issues, refusing to enforce certain "browse-wrap" agreements formed on the Internet, wherein terms of service are provided via a link during a given transaction.[94] For example, in *Specht v. Netscape*, the court held that "an offer of a license agreement, made independently of freely offered software and not expressly accepted by a user of that software, [does not bind] the user to an arbitration clause contained in the license."[95] In *Specht*, users of Netscape software downloaded a program called SmartDownload, which did not require any explicit assent to the terms of its license agreement.[96] SmartDownload's terms were available, but they were nested ambiguously in Netscape's website.[97] However, the SmartDownload program downloaded an Internet browser. This Internet browser indicated that users would be bound by the terms of the SmartDownload license, and provided a link to the license.[98] The court refused to extend consent to the browser's contract to the SmartDownload license terms because "the individual obtaining SmartDownload is not made aware that he is entering into a contract."[99]

Courts have been less willing to extend such magnanimity to the realm of clickwrap agreements.[100] Courts routinely enforce these terms, even when the user is not aware of the terms or when the terms erode the

---

to each and every term and condition presented on a website); Moore v. Microsoft Corp., 293 A.D.2d 587 (N.Y. App. Div. 2002) (holding that a mouse click stood in for binding consent); Barnett v. Network Solutions, Inc., 38 S.W.3d 200, 204 (Tex. App. 2001) (upholding a forum selection clause in a contract for domain name registration).

93. *See*, *e.g.*, Hill v. Gateway 2000, 105 F.3d 1147 (7th Cir. 1997); ProCD, Inc. v. Zeidenberg, 86 F.3d 1447 (7th Cir. 1996) (both cases discussing the binding nature of "shrinkwrap" agreements).

94. *See*, *e.g.*, Hines v. Overstock.com, Inc., 668 F. Supp. 2d 362, 367 (E.D.N.Y. 2009); Specht v. Netscape Comm. Corp., 150 F. Supp. 2d 585, 587, 589 (S.D.N.Y. 2001).

95. *See* Specht v. Netscape Commc'ns Corp., 150 F. Supp. 2d 585, 587, 589 (S.D.N.Y. 2001). For an in-depth discussion of the *Specht* case, see 3-4A Computer Law § 4A.02[e][iii], "Computer Law," Matthew Bender & Company (2008).

96. *Specht*, 150 F. Supp. at 595.

97. *Id.* at 595.

98. *Id.* at 596.

99. *Id.*

100. Clickwrap agreements require that a user view terms of service and click on a button stating "I agree" before registering for a given service.

user's bargaining position, simply because the contracts are in *writing*.[101] In digital-era transactions that provide services for free, this makes writing serve as a stand-in for both consideration and consent. In *Moore v. Microsoft Corp.*,[102] the court held that users of a Microsoft program were bound to the terms of a clickwrap agreement because mere opportunity to read the contract stood in for binding consent.[103] A meeting of the minds was not required, so long as there could have been such a meeting. In particular, the court noted that users were "required to indicate assent to the EULA by clicking on the 'I agree' icon . . . ." before downloading the program.[104] With these facts in hand, the court proceeded to bar all of the plaintiffs' deceptive trade practice claims.[105] The *Moore* court's acceptance of a single click as *de facto*, undisputable binding assent is troubling, yet it has been mirrored in recent cases. The District Court of New Jersey, in *Davis v. Dell*, recently bound a consumer to "click to agree" terms of service for a television ordered online.[106] Also, the Texas Court of Appeals held that all provisions of a click-through contract were binding, whether or not the user read them.[107] These rulings are consistent with the common-law era schema of contractual analysis, yet they fail to capture the realities of digital-era transactions.

Unfortunately, a single mouse click and a term in writing are hollow indicators of the binding mutual assent a contract is meant to memorialize. Clickwrap agreements, like browse-wrap agreements, are dangerous because they fail to alert the user to the serious nature of the agreement. Users are often not on guard when they "sign"[108] these agreements because the "signing" takes place in informal, casual environments that promote only cursory inspection. In these informal, atypical contractual circumstances, the existence of the single click

101. *See*, *e.g.*, Moore v. Microsoft Corp., 293 A.D.2d 587 (N.Y. App. 2002).

102. *Id.*

103. *Id.* at 587. Naturally, a court must deal with concerns about plaintiffs in future cases claiming not to have read a contract's terms, when in fact they have. Thus, the ruling could be considered as a way for the courts to avoid potential perjury from future plaintiffs. However, stiff criminal felony penalties already serve as a strong disincentive to perjury. *See* 18 U.S.C. § 1621 (2009) (setting forth the criminal penalties for perjury). Additionally, it seems strange that a court would expect a rational consumer to read and understand the entirety of a dense legal contract, when analyzing such a contract would be more expensive to the consumer than the potential benefit of the *de minimis* services. *See supra* Section IV-D.

104. *Moore,* 293 A.D.2d at 587.

105. *Id.* at 588.

106. Davis v. Dell, No. 07-630, 2007 U.S. Dist. LEXIS 94767, at *15 (D.N.J. Dec. 28, 2007) (holding that clicking an "I Agree" button online stands in for binding consent to each and every term and condition presented on a website).

107. Barnett v. Network Solutions, Inc., 38 S.W.3d 200, 204 (Tex. App. 2001) (upholding a forum selection clause in a contract for domain name registration).

108. The author uses this term with skepticism.

(taking less than one second), or a scroll to the bottom of the terms of an agreement, followed by a click (taking approximately one second) stand in for the entire process of bargaining, exchange, and meeting of the minds.

Furthermore, note that the click of a mouse is used to indicate almost anything on a computer. A click changes the font, visits a web page, closes a document, plays a video, cancels a program, scrolls down a page, and performs countless other actions. Because the mouse is a "universal button" that fulfills many roles, it lacks importance as an indicator of binding contractual assent. The click of the mouse button is an affirmative act; however, it carries none of the significance, ritual, or power that a written signature creates, or that the seal of ages past held. Computer users can easily average 10,000 mouse clicks per day.[109] This routine and often meaningless act cannot stand in for the powerful binding significance of a signature because it fails to activate relevant contractual schemas. Yet many courts let this casual, mindless, and automatic action stand in for actual, informed consent because courts rely on an antiquated, common-law era schema of contractual analysis to analyze digital-era transactions.

V.   STEPS ALONG THE ROAD: PROPOSED METHODS OF ADDRESSING THE PROBLEM

The break between the common-law era schema of contractual analysis and the reality of digital-era transactions has brought with it the need for change. In the common-law era, written contracts used to be sacred because they clearly indicated assent to binding, immutable, negotiated-for terms. In contrast, the transactions of the digital age are ubiquitous, long, non-negotiable, and subject to unilateral change on a whim. These digital-era transactions reign supreme, even when they use 5,000 words to govern transactions valued at significantly less than a penny.[110]

Today, people lack the time, money, and motivation to evaluate the

---

109. Calculated by the Author using the software tool "Clickr" and averaged over a two-day period of typical computer use. 10,278 average clicks per day.

110. This is a "back of the envelope" calculation. Social networking website Facebook has 100 million users, and projected $300 million in revenue for 2008. Scott Karp, *Why Isn't Facebook Making More Money? (Hint: Advertiser Value and User Value Are Not Aligned)*, PUBLISHING 2.0, Sept. 22, 2008, http://publishing2.com/2008/09/22/why-isnt-facebook-making-more-money-hint-advertiser-value-and-user-value-are-not-aligned/. Given that Facebook's Vice President of Sales Mike Murphy recently noted that the average Facebook user visits the website four times per day, each on line browsing session is worth approximately one fiftieth of a cent to the company (Roughly $3 per year per user). Posting of Mitch Joel to TwistImage, Facebook Facts That Will Blow Your Marketing Mind, http://www.twistimage.com/blog/archives/facebook-facts-that-will-blow-your-marketing-mind/ (Oct. 27, 2007, 22:27).

many digital era contracts that they encounter on a daily basis. Furthermore, rational economic consumers are incentivized to ignore these contracts[111] because the transaction costs of analyzing such fluid agreements outweigh the benefits to the consumer of the services offered. Today's written contracts are often superficial indicators of the binding, immutable, and concise agreements they used to symbolize. Courts must focus the contours of the traditional common-law era schema of contracts by paying more careful attention to the reasons why written contracts have been traditionally binding, or by imparting greater emphasis upon equitable principles of fair dealing when reviewing terms.

> *A.   Contractual analysis should focus on the factors that made writings binding, and accept that a contract's existence in writing no longer stands in for such factors.*

Courts must no longer view the written word as the sole indicator of a bargained-for-exchange. The writings of the digital age bear almost no resemblance to the writings that spawned the Statute of Frauds and the Parole Evidence Rule. Instead, today's digital-era transactions are substantively different. Courts must be willing to look past whether a contract is in writing, and instead consider whether it was negotiable, whether it was entered into under circumstances that encourage forethought, whether the contract was immutable, and whether the parties clearly indicated an understanding and intent to be bound. These pillars give the written word its binding power. Courts must recognize that a contract's existence in writing serves merely as a symbol of the foregoing factors.

> *B.   The modern schema of contractual analysis should consider equitable principles.*

In addition to focusing on the foregoing factors, courts should also place, to some degree, greater emphasis on equitable principles when analyzing digital-era transactions. Many digital-era transactions are also contracts of adhesion. Such agreements more closely resemble unilateral lists of demands than bargained-for exchanges. In many circumstances, rational economic actors have little motivation to read the terms of these agreements because they are mutable and the services may have little or no monetary value.[112] Until a modern schema of contractual analysis considers the "facts on the ground" involved in digital-era transactions, legal analysis will fail to account for the realities of life in the digital age.

A counterargument can be made that any application of equitable

---

111. *See supra* Section IV-D

112. *See supra* Sections IV-A, IV-D.

principles to contractual analysis will harm the market. Equitable principles are more subjective than their bright-line counterparts, and market actors will be less capable of predicting the consequences of the contracts they write.[113] Notwithstanding these concerns, equitable principles have never been entirely separated from contractual analysis.[114] Even the common-law era schema of contracts took some effort to ensure that contracts were fairly considered and agreed to by the signing parties. Second, the terms of digital-era transactions are already somewhat unpredictable, as they are subject to varied interpretations across different jurisdictions.[115] The use of equitable principles to evaluate digital-era transactions merely asks that a court dig deeper into the facts to make certain that justice is served by ensuring that contracting parties conform to both the letter and the *spirit* of the law.

A second counterargument can be made that negotiable terms are an administrative impossibility for businesses dealing with millions of consumers, and that unilateral power to modify a contract is essential because it keeps a business flexible. This is a valid concern, but the application of equitable principles does not prevent parties from modifying a contract's terms, nor does it demand that each and every contract be negotiable. Rather, it requires a closer evaluation of fluid contracts, to see if they garner the acceptance and consideration that make them deserve the same treatment as armor-plated agreements. For *de minimis* or mutable "submarine" agreements, the presumption of the armor-plated written contract seems questionable at best. If terms cannot be practically negotiated, they should carry less weight. If terms are not important enough to be negotiated, they should not be given the benefit of a rigid interpretation, but rather a lesser standard of deference.

C.   *Courts stand in the best position to resolve the problems of digital-era transactions by adjusting the modern schema of contractual analysis.*

The market is not in a position to correct the problems of digital-era transactions. Most digital providers are for-profit entities, and minimizing liability gives businesses a competitive edge. Because of this incentive structure, one-sided agreements are the status quo for many of

---

113. For an analysis of the dichotomy between bright-line rules and subjective standards, see generally Pierre J. Schlag, *Rules and Standards*, 33 UCLA L. REV. 379 (1985).

114. For an in-depth analysis of the relationship between equitable principles and contracts, see generally LARRY A. DiMATTEO, EQUITABLE LAW OF CONTRACTS: STANDARDS AND PRINCIPLES (2001).

115. For example, consider the great deal of conflicting case law regarding whether clickwrap agreements are enforceable. *See* NTS AM. JUR. 2D *Computers and the Internet* § 16 (2010) (enforceability of "clickwrap" or "shrinkwrap" agreements).

today's digital industries. An individual company that refrains from imposing harsh, mutable, or non-negotiable terms risks losing its competitive edge because negotiable terms increase transaction costs and increase potential liability for the company in comparison to its peers. Furthermore, it is common knowledge that most consumers do not read the terms of such digital-era transactions.[116] Drafters who provide more palatable terms to consumers receive increase in market share for doing so, and therefore have no incentive to include negotiable terms or to make their terms immutable upon signing.

As discussed above, many courts have given websites and providers a carte blanche to write any terms they so desire, so long as a single click is provided to stand in for the agreement of the user. When such a simple act already serves as an armor-plated indicator of assent, contracting parties have no need to draft contracts that exhibit the traditional hallmarks of the written word. The symbol of the mouse click has come to stand in for the carefully considered consent it used to represent. Perversely, contract drafters are thereby incentivized to encourage consumers not to read the very contracts they are signing. The drafter benefits from the consumer's lack of knowledge of the terms because many of the terms can be harmful to consumers. The drafter is also not penalized in court for these practices because a consumer's knowledge of the terms is immaterial in deciding whether a contract's terms are valid or not.

For the foregoing reasons, it is clear that any individual Internet or software provider is unlikely to implement greater fair-dealing in digital-era transactions. Such techniques are unnecessary for these parties because courts have given great leeway to any terms that exist in writing. Therefore, providers have no incentive to engage in different contracting practices. As such, no single company has an incentive to "make the leap" to a new form of digital-era contracting.

This type of a situation, where the public would benefit, but providers would be harmed for individually implementing new practices, is one that demands the attention of the courts. Courts should refuse to apply written terms aggressively merely because they are in writing. Instead, by looking for more binding, serious, and realistic indicators of a bargained-for exchange, courts can create a level playing field between service providers. Those who would tie damaging terms to tempting services would think twice, lest their agreements be held unenforceable. Drafters could seek to create more binding indicators of assent and clearer terms for consumers, or simply redact inequitable terms out of their contracts. In any case, there will be no detriment to competition,

---

116. Hillman & Rachlinski, *supra* note 53, at 446.

because all providers will be impacted in the same manner. This will incentivize digital-era service providers to ensure that contracts are more than simple unilateral lists of demands.

The courts are uniquely situated to confront these complex questions. Legislatures often move slowly and sporadically in the face of complex issues. In the realm of digital-era transactions, which has seen, and will likely continue to see, significant legal and cultural change, the courts find themselves at a nexus whereby they can move flexibly to confront and head-off these issues before they become more serious than they already are. The courts need only to update today's schema of the written contract to reflect the realities of the digital era.

CONCLUSION

Today's schema of the written contract, based on assumptions of the era of the common-law contract, is often subject to false assumptions about digital-era transactions. These misconceptions are harmful because they give terms in writing a great deal of binding power, even when the hallmarks that made writings powerful no longer exist. Often in modern contract law, "opportunity" to read a contract masquerades as an incentive to read, an understanding of the agreement, and acceptance of the agreement all at the same time. In the modern digital contracting environment, such assumptions must be taken with more than just a grain of salt. Courts must consider the written word very carefully when enforcing the terms of digital-era transactions. They must focus more closely upon *why* written contracts were binding in times past, as opposed to focusing upon the mere fact of a contract's existence in writing. While individual service providers have no incentive to change the way they draft digital-era transaction agreements, society as a whole would benefit from such techniques. As such, it remains up to the courts to reshape the significance of the written word in the world of digital-era transactions.

BLOOD CODE:

THE HISTORY AND FUTURE OF VIDEO GAME CENSORSHIP

BY JEFFREY O'HOLLERAN*

INTRODUCTION

Video games, once an obscure and relatively insignificant form of entertainment, have become a major world industry, with sales totaling $12.53 billion in 2006 and $17.9 billion in 2007.[1] There are also over

---

    1. Posting of Matt Peckam to PCWorld.com Blog, Game On: 2007 Video Games Sales Soar by Record-Shattering 43%, PCWORLD.COM, http://blogs.pcworld.com/gameon/

213,000 employees in the video game industry in the United States alone.[2] Such figures drive home the point that when we discuss video game censorship, we are dealing with a significant number of people in our country whose freedom of speech, livelihood, and economic contributions are at stake.

Over the past several years, there have been many attempts at the state and national levels to regulate the video game industry, particularly in the form of labeling and limiting availability to minors.[3] One of the most recent attempts comes from Representative Joe Baca (D-Cal), whose Video Game Health Labeling Act of 2009 would mandate that "all video games with an Electronics Software Ratings Board (ESRB) rating of Teen (T) or higher be sold with a health warning label."[4] The proposed sticker would read: "WARNING: Excessive exposure to violent video games and other violent media has been linked to aggressive behavior."[5]

Unfortunately, such a regulation is not unique in the intermittent assault on the video game industry, as we have seen over the past two decades.[6] It is important to distinguish between government-mandated regulation and voluntary self-regulation. Obviously, if an industry wants to self-censor its content,[7] it is that industry's unequivocal right to do so and no legal argument should be made to the contrary. In this article, I contend that government-mandated ratings systems or warning labels (such as the one proposed by Representative Baca) are unconstitutional censorship under the First Amendment. The Supreme Court recently agreed to hear a case involving banning violent game sales to minors, but for now the only case law comes to us from the Circuit Courts.[8] Along with these Circuit opinions, the Supreme Court's First Amendment jurisprudence regarding other media gives us an idea of how the video

---

archives/006324.html (Jan. 17, 2008, 16:33 PST).

2. IBIS WORLD, VIDEO GAMES: U.S. INDUSTRY REPORT (2010), http://www.ibisworld.com/industry/retail.aspx?indid=2003&chid=1.

3. *See, e.g.*, Press Release, FTC, Undercover Shop Finds Decrease in Sales of M-Rated Video Games to Children, March 30, 2006, *available at* http://www.ftc.gov/opa/2006/03/videogameshop.shtm.

4. News Release, Congressman Joe Baca, Rep. Baca Introduces Legislation to Make Violent Video Games Sold With Health Warning Label, Jan. 7, 2009, *available at* http://www.house.gov/apps/list/press/ca43_baca/videogame_health_010709.html.

5. Video Game Health Labeling Act of 2009, H.R. 231, 111th Cong. § 1(b) (2009), *available at* http://www.thomas.gov/cgi-bin/query/z?c111:H.R.231:/.

6. *See infra* Section II.

7. For example, the makers of major video game consoles refuse to license games with an ESRB rating of AO (Adults Only) for release on their consoles. *See, e.g.*, Brendan Sinclair, *Manhunt 2 PC Gets AO Rating*, GAMESPOT, Aug. 25, 2009, http://www.gamespot.com/news/6216220.html?tag=result;title;1.

8. Posting of Jacob Sullum to Reason.com, http://reason.com/blog/2010/04/26/supreme-court-to-consider-viol (April 26, 2010).

game debate should turn out. Films, for example, have long existed with scant more than "regulation by raised eyebrow."[9] There is good reason to think that video games should not be subject to any additional regulatory scheme beyond the self-imposed ratings seen in the film industry.

The purpose of this article is to look at the history of video game censorship and analyze the political, legislative, and legal battles surrounding this increasingly important medium of entertainment and to reach a conclusion about how the debate might and should turn out.

Section I provides some background information on First Amendment jurisprudence and accordingly shows how the legal status of obscenity has changed due to society's desensitization. Section II addresses the analogous histories of films and video games, particularly how their self-censorship regimes developed in similar manners. This includes the particular set of battles the video game industry endured as the nascent technology developed in a way that brought new concerns after the establishment of its self-regulatory scheme. Because the censorship debate continued after the establishment of a ratings system, Section III discusses why video games should not be treated differently than films, including: (a) a discussion of the difference between objectionable video game content and pornography/obscenity; (b) the analogous violence that exists in games and films; (c) the positive aspects of violent gaming; and (d) the legal and political consequences of desensitization. Section IV outlines the current state of video game censorship jurisprudence. Section V addresses why mandatory ratings and warning labels on video games are unconstitutional censorship under the First Amendment.

Finally, I conclude that due to the unconstitutionality of such labels and the sufficiency of self-regulation, legislatures and politicians need to stop bombarding the game industry with the threat of regulation. But even if they do not, I argue we will see legislative complacency and a decrease in regulatory attempts based on social desensitization, similar to the trajectory of the film industry's decrease in controversy.

I.   FIRST AMENDMENT BACKGROUND

"Congress shall make no law . . . abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances."[10] The Free Speech Clause of the First Amendment has had a long, rocky, and heavily

---

9. *See, e.g.,* Steven J. Cleveland, *The NYSE as State Actor?: Rational Actors, Behavioral Insights & Joint Investigations*, 55 AM. U.L. REV. 1, 52 (2005) (using the phrase "regulation by raised eyebrow" to describe a situation in which non-state actors are forced to self-regulate) (citation omitted).

10. U.S. CONST. amend. I.

litigated history. The interpretation of the rights granted under the Free Speech Clause have changed significantly over the past two centuries.

As a general matter, First Amendment jurisprudence has developed to give varying levels of protection to different forms of speech. Core political speech is most highly protected, while other forms of speech, such as symbolic speech (acts performed to convey a message) or commercial speech, are afforded less protection.[11] Also, the Court has drawn a distinction between time, place, and manner restrictions and content-based restrictions: unlike time, place, and manner restrictions, content-based restrictions are reviewed under strict scrutiny by the Court—even when the free speech of minors is at issue (which is largely the focus of video game censorship).[12] "Content-based regulations are presumptively invalid"[13] and government action "must be narrowly tailored to promote a compelling [g]overnment interest."[14]

The Court has held that even though the language of the First Amendment is unconditional, it was "not intended to protect every utterance."[15] Obscenity and libel, for example, are outside the boundaries of First Amendment protection.[16] There are two important factors that determine these boundaries at any given point in history: (1) the language of the case law, and (2) the interpretation of that language. These two factors are particularly disconnected because of the importance of the social context in which the law is applied.

The changes seen in obscenity law and the implementation of those standards shows the effect of this disconnect. In 1957, the Supreme Court decided *Roth v. United States*, upholding convictions under federal and California obscenity statutes,[17] on the basis of the following standard: obscenity laws are constitutional if they regulate content that has no social value, is not an essential part of the exposition of political ideas, and the truth value expressed is outweighed by a social interest in order and normality.[18] The Court said that content is obscene if "the

---

11. *See, e.g.,* United States v. O'Brien, 391 U.S. 367, 376 (1968) (holding that "communication of ideas by conduct" is not always constitutionally protected); Virginia Bd. of Pharmacy v. Virginia Citizens Consumer Council, 425 U.S. 748, 771 (1976) (holding that the content of commercial speech can be regulated to a certain extent and to a greater degree than political speech).

12. Video Software Dealers v. Schwarzenegger, 556 F.3d 950, 957 (2009) ("Existing case law indicates that minors are entitled to a significant measure of First Amendment protections, that content-based regulations are presumptively invalid and subject to strict scrutiny, and that if less restrictive means for achieving a state's compelling interest are available, they must be used.").

13. R.A.V. v. St. Paul, 505 U.S. 377, 382 (1992) (citations omitted).

14. United States v. Playboy Entm't Group, 529 U.S. 803, 813 (2000) (citation omitted).

15. Roth v. United States, 354 U.S. 476, 483 (1957).

16. *Id.* at 485 (citing Chaplinsky v. New Hampshire, 315 U.S. 568, 571–72 (1942)).

17. *Id.* at 494.

18. *Id.* at 485.

average person, applying contemporary community standards, [finds] the dominant theme of the material taken as a whole appeals to prurient interest."[19]

In *Memoirs* v. *Massachusetts*, decided nine years after *Roth*, "the Court veered sharply away from the *Roth* concept and, with only three Justices in the plurality opinion, articulated a new test of obscenity[:]"[20] "(a) the dominant theme of the material taken as a whole appeals to a prurient interest in sex; (b) the material is patently offensive because it affronts contemporary community standards relating to the description or representation of sexual matters; and (c) the material is utterly without redeeming social value."[21]

The Court's test for obscenity was amended again in 1973 when the Court decided *Miller v. California*, in which the Court recognized that "the *Roth* definition [as amended in *Memoirs*] does not reflect the precise meaning of 'obscene' as traditionally used in the English language."[22] The test then became: "(a) whether 'the average person, applying contemporary community standards' would find that the work, taken as a whole, appeals to the prurient interest . . . ; (b) whether the work depicts or describes, in a patently offensive way, sexual conduct specifically defined by the applicable state law; and (c) whether the work, taken as a whole, lacks serious literary, artistic, political, or scientific value."[23]

The Court's semantic evolution tells us little about how the law should be implemented. Depending on the social context, the earlier *Roth* test for obscenity (applying contemporary community standards to determine whether content taken as a whole appeals to a prurient interest in sex)[24] could easily result in an identical censorship regime as the later *Miller* test (sexual content that appeals to a prurient interest in sex, portrays sex in a patently offensive manner, and lacks serious literary, artistic, political, or scientific value).[25] The result is contingent on the social context in which the test is implemented (by definition).

One particularly noteworthy example of the importance of social context in First Amendment law is the publication of James Joyce's *Ulysses*. Joyce's story was published in the 1920s in the United States as a serialized novel in a journal publication called *The Little Review*.[26] When the "Nausicaa" episode was published, which contained references to

---

19. *Id*. at 489 (citations omitted).

20. Miller v. California, 413 U.S. 15, 21 (1973) (citing Memoirs v. Massachusetts, 383 U.S. 413 (1966)).

21. *Memoirs*, 383 U.S. at 418.

22. *Miller*, 413 U.S. at 20 n.2.

23. *Id*. at 24 (internal citations omitted).

24. *Roth*, 354 U.S. at 478.

25. *Miller*, 413 U.S. at 24.

26. ERIC BULSON, THE CAMBRIDGE INTRODUCTION TO JAMES JOYCE 13 (2006).

onanism and used the word "undies," the American publishers were fined in court for obscenity and the serialization of the book ceased.[27] It wasn't until 1933 that a Federal District Court judge held the book not to be obscene.[28]

Today, of course, it is thoroughly impossible to imagine comparable content raising legal concerns. Obscenity standards have changed dramatically over time based on social conditions,[29] as have other standards in First Amendment jurisprudence, including: what constitutes speech; what level of protection is a given form of speech worthy of receiving; and whether different media should be treated differently.

Tracing the evolution of a given medium more fully informs these answers. For purposes of analyzing video games, the history of film censorship provides the best framework.

II.   THE ANALOGOUS HISTORIES OF FILMS AND VIDEO GAMES

A.   *Film Controversy and the Formation of the MPAA*

Because of the contextually sensitive nature of media censorship and because video games are a relatively new, somewhat unlitigated medium, it is best to start the discussion by comparing video games with another, more well-litigated medium in order to have a frame of reference.

In terms of how technology conveys information, the most analogous medium to the video game is the motion picture. They both employ the delivery of visual and auditory information, although the distinguishing characteristic is the interactive quality of video games.[30] Because of the shared characteristics of these two media, looking at the history of motion picture censorship gives us the best insight into predicting what will—and should—happen in the video game censorship debate.

The ability to convey information through a newly devised medium, especially vivid multi-sensorial media like films and video games, is a

---

27. *Id.*

28. *Id.* at 15.

29. Compare, e.g., JAMES JOYCE, ULYSSES 299–301 (Hans Walter Gabler ed., Vintage Books 1986) (1922), with the art of Mike Diana, The Official Mike Diana Website, http://www.mikedianacomix.com/mikediana/mikediana.html (last visited Mar. 7, 2010). In 1994, Mike Diana was convicted of obscenity for selling a comic book he had drawn. Jason Zinoman, *A Very Naughty Cartoonist as a Paragon of Normalcy*, N.Y. TIMES, July 19, 2005, *available at* http://theater.nytimes.com/2005/07/19/theater/reviews/19bust.html?_r=1. The change in obscenity standards between the 1920s and 1990s should be apparent from this contrast.

30. It is also arguable that tactile output is a shared characteristic of films and video games: modern video games quite often utilize controller vibration technology, and film subwoofers elicit visceral bodily sensations apart from delivering sound to the human ear. Tactile output, however, is not a definitional requirement of either media.

powerful tool that has the potential to create great anxiety in a society, which in turn leads to political pressures that are catalytic in the formation of laws. This was most readily apparent in Hollywood during the Great Depression. As Brandeis University professor Thomas Doherty said, "After . . . years of gun-toting gangsters and smart-mouthed convicts, adulterous wives and promiscuous chorines, irreverence from the lower orders and incompetence from above, the immoral and insurrectionist impulses on the Hollywood screen were beaten back by forces dedicated to public restraint and social control."[31] It was also the case that:

> Though other media were more sexually explicit and politically incendiary, the domain of American cinema was panoramic and resonant, accessible to all, resisted by few. It was to Hollywood that politicians, clerics, and reformers looked when they detected a shredding of the moral fiber of the nation and a sickness in the body politic.[32]

The censorship of films was an outgrowth of the ideology of the Progressives, who worried about the impact modernization and urban living would have on the nation's morality and thus saw government as a tool "to create a more livable environment and reinforce traditional Victorian moral standards through 'protective' legislation."[33] Motion pictures were viewed as a particularly dangerous influence, and the first instance of censorship occurred in 1907, when the city of Chicago enacted an ordinance requiring film exhibitors to acquire a permit from the Superintendent of Police before their film could be shown to the public.[34] Over the next two decades, cities and states continued to enact their own censorship regimes, and as the threat of regulation grew, the industry chose the course of self-censorship.[35] The major studios formed a trade association in 1922, the Motion Picture Producers and Distributors of America which was later renamed the Motion Picture Association of America (MPAA), and they hired political veteran William Harrison Hays to be their frontman.[36]

By 1922, film censorship existed in Pennsylvania, Ohio, Florida, New York, Maryland, Kansas, and Virginia, with legislation introduced

---

31. THOMAS DOHERTY, PRE-CODE HOLLYWOOD: SEX, IMMORALITY & INSURRECTION IN AMERICAN CINEMA 319 (John Belton ed., 1999).

32. *Id.*

33. GREGORY D. BLACK, HOLLYWOOD CENSORED: MORALITY CODES, CATHOLICS, & THE MOVIES 8 (Cambridge Univ. Press 1996) (1994).

34. *Id.* at 11.

35. *See id.* at 21–33.

36. *Id.* at 31.

in thirty-seven other states.[37] The Massachusetts legislature had passed a film censorship bill, but a public referendum needed for it to become law failed.[38] While legislation to censor film exhibition was a generally acceptable means of achieving social stability and moral fortitude, others, such as Chicagoan Martin Quigley took a different view. Quigley, a staunch lay Catholic, advocate for theater owners, and publisher of *Exhibitors World Herald*, thought that the solution was to eliminate objectionable content during the production phase.[39] Also, he saw self-censorship as a way for the film industry to reduce criticism and ensure continued popularity of films.[40] Using his connections in the Catholic Church, Quigley collaborated with Father Daniel Lord and Joseph I. Breen, among other Catholics, to create a draft of what would eventually become the production code for the film industry.[41]

Quigley took the code to Hays, who later said, "My eyes nearly popped out when I read it. This was the very thing I had been looking for."[42] Dealing with the plethora of municipal and state censorship boards over the years had been annoying for the film industry, and producers such as Louis B. Mayer conceded that the Catholic lobby may be right that there was too much sex and violence in films, so the code was quickly adopted.[43]

The Hays Code, as it was widely known, ruled cinema for the next few decades. The MPAA changed significantly in 1966 when Jack Valenti became the association's president. Valenti wrote,

> It was plain that the old system of self-regulation, begun with the formation of the MPAA in 1922, had broken down. What few threads there were holding together the structure created by Will Hays, one of my two predecessors, had now snapped. . . . I determined to junk [the Production Code] at the first opportune moment.[44]

Valenti, as he told in his writings, came into the MPAA at a time when control over the content of films was eroding. The film industry's lack of control over its content could mean a renewed interest in legislative intervention.

But by the 1950s, courts were expanding First Amendment

---

37. *Id.* at 32.
38. *Id.*
39. *Id.* at 35.
40. *Id.* at 36.
41. *Id.* at 37–40.
42. *Id.* at 40.
43. *Id.* at 42–43.
44. Jack Valenti, MPAA, Ratings History: How It All Began, http://www.mpaa.org/ Ratings_HowItAllBegan.asp (last visited Mar. 7, 2010).

2010]

CRITICAL: BLOOD CODE

protections for films. In the early 20th Century, films were not viewed as a medium particularly worthy of free speech protections. The Supreme Court decided *Mutual Film Corp. v. Industrial Commission of Ohio* in 1915, holding that "the exhibition of moving pictures is a business, pure and simple, originated and conducted for profit, like other spectacles, not to be regarded, nor intended to be regarded by the Ohio Constitution, we think, as part of the press of the country, or as organs of public opinion."[45] This standard changed radically with the passage of time. In 1950, film distributor Joseph Burstyn received a license from the Motion Picture Division of the New York Department of Education to exhibit the Italian-made short film "The Miracle."[46] After receiving hundreds of complaints, the New York Board of Regents held a hearing and rescinded the license on the grounds that "The Miracle" was "sacrilegious" in violation of New York law.[47] In *Joseph Burstyn, Inc. v. Wilson*, the Supreme Court found the ban on sacrilegious speech unconstitutional, holding, "It is not the business of government in our nation to suppress real or imagined attacks upon a particular religious doctrine, whether they appear in publications, speeches, or motion pictures."[48]

The *Burstyn* Court directly addressed the decision in *Mutual Film Corp.* about the worthiness of films in receiving strict scrutiny protection under the First Amendment, holding,

> It is urged that motion pictures do not fall within the First Amendment's aegis because their production, distribution, and exhibition is a large-scale business conducted for private profit. We cannot agree. That books, newspapers, and magazines are published and sold for profit does not prevent them from being a form of expression whose liberty is safeguarded by the First Amendment. We fail to see why operation for profit should have any different effect in the case of motion pictures.[49]

Today, the First Amendment protection provided by the Court in cases like *Burstyn* in conjunction with the industry's utilization of the MPAA constitute the extent of the film industry's regulation: in essence, it is what some legal scholars have referred to as "regulation by raised eyebrow."[50] The history of video game controversy closely parallels this development in the film industry, hence providing a foundation on which

---

45. Mutual Film Corp. v. Indus. Comm'n of Ohio, 236 U.S. 230, 244 (1915).
46. Joseph Burstyn, Inc. v. Wilson, 343 U.S. 495, 497 (1952).
47. *Id.* at 458–59.
48. *Id.* at 505 (citations omitted).
49. *Id.* at 501–502 (internal citations omitted).
50. *See* Cleveland, *supra* note 9 (using the term "regulation by raised eyebrow" to describe a situation in which non-state actors are forced to self-regulate).

to base an argument that video games should not be treated differently than films, subject to extra layers of regulation.

B.   *Early Video Game Controversy and the Formation of the ESRB*

The development of video game controversy was slower than that of films because its technology was slower to develop. Although motion pictures could produce recognizable (and hence objectionable) content from the beginning, early examples of video game controversy come off as trite and overblown when compared to later controversies, which are rife with very real, socially disruptive violence. From this evolution, it is clear why we did not see more legal action until the mid 1990s and early 2000s.

Two of the first games to create significant national controversy were *Mortal Kombat* and *Night Trap*.[51] This took place after home consoles and arcade machines had advanced significantly[52] and the industry had expanded to $5.3 billion a year.[53]

Released in 1992, *Mortal Kombat* was a fighting game that drew inspiration from martial arts films like *Enter the Dragon* and *Bloodsport*.[54] The franchise has sold over 26 million units since its inception.[55] It was originally an arcade game, but was soon released for the home consoles, increasing its availability for consumption—and consequently the worries about the game's impact.

---

51. David Lightman, Violent Image of Video Games; Lieberman Joins Critics In Call For Warning Labels; Critics of Video Game Industry Unite in Push for Warning Labels, HARTFORD COURANT, Dec. 2, 1993, at A1, *available at* http://articles.courant.com/1993-12-02/news/0000001226_1 (describing a press conference in which Senator Joseph Lieberman and Captain Kangaroo screened portions of Mortal Kombat and Night Trap).

52. *E.g.*, *Mortal Kombat*, starting in 1993, ran on the Midway T-Unit arcade machine that used the 32-bit TMS34010 processor, *see* http://www.arcade-history.com/?n=mortal-kombat&page=detail&id=1674.

53. Laura Evenson, *Video Game Makers Pledge To Set Up Ratings System*, S.F. CHRON., Dec. 10, 1993, at B1.

54. *Mortal Kombat*'s fighter Liu Kang is an obvious Bruce Lee imitation. *See* ENTER THE DRAGON (Warner Bros. 1973). One of Johnny Kage's fighting moves consists of doing the splits and punching the opponent in the groin, just as Jean-Claude Van Damme's character did in the film *Bloodsport*. *See* BLOODSPORT (Cannon Group 1988). Van Damme was actually approached by *Mortal Kombat* creators Ed Boon and John Tobias about being in the game, but he turned down the offer because he was already in talks with Sega to star in a game. STEVEN L. KENT, THE ULTIMATE HISTORY OF VIDEO GAMES 462 (Three Rivers Press 2001).

55. *Mortal Kombat: Ed Boon Interview*, NINTENDO: THE OFFICIAL MAG., June 6, 2007, *available at* /http://www.officialnintendomagazine.co.uk/news_060707_mortal.html/.

Exhibit 1: *Mortal Kombat*[56]
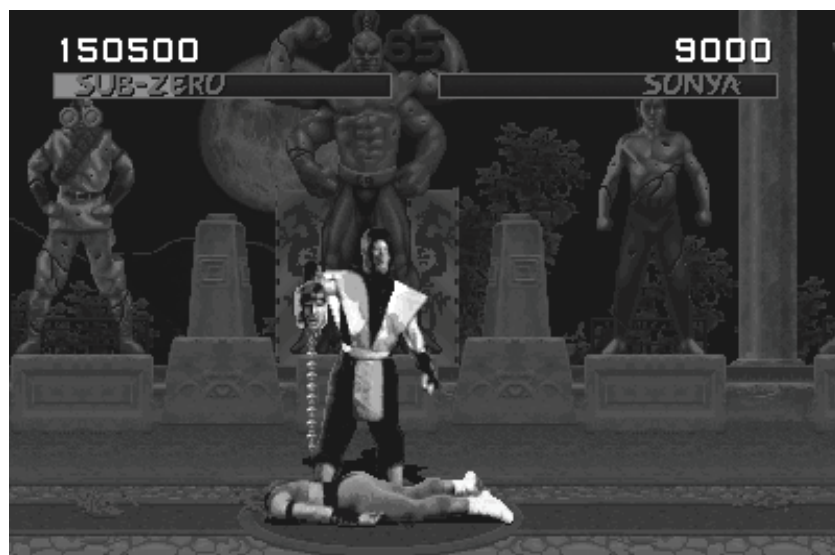
 Mortal Kombat, while it maintained the same technical gameplay formula as other contemporary fighting games,[57] deviated significantly and noticeably in terms of visual and audio presentation. *Mortal Kombat* utilized actual filmed images of actors to provide the basis for the sprites (animated figures) in the game, and the background settings were also more realistic.[58] The sound effects were also much more gritty and realistic than in previous fighting games, intensifying the sense of brutality as much was technologically possible. In combination with this increase in audiovisual realism, *Mortal Kombat*'s fighting was unprecedentedly violent. Punches and kicks were accompanied by gratuitous blood splatters,[59] and fights ended with the winner killing his

---

 56. MORTAL KOMBAT (Midway 1992). This screenshot shows one of the more controversial and well known fatalities: Sub-Zero ripping off his opponent's head along with the spinal column. The name "Sub-Zero" is possibly a reference to the character of the same name in the Arnold Schwarzenegger film *The Running Man*. *See* THE RUNNING MAN (TriStar Pictures 1987). Another well-known fatality included ripping out an opponent's still-beating heart, which could be seen as a reference to the human sacrifice scene from the film *Indiana Jones and the Temple of Doom*. *See* INDIANA JONES AND THE TEMPLE OF DOOM (Lucasfilm, Ltd., 1984).

 57. The formula for fighting games has not drastically changed over the last two decades. *See, e.g.,* FATAL FURY: KING OF FIGHTERS (SNK 1991); VIRTUA FIGHTER (Sega 1993); SHAQ FU (Electronic Arts 1994); SUPER SMASH BROS. MELEE (Nintendo 2001); TEKKEN 6 (Namco Bandai 2007); *see also* IGN, IGN's Top 100 Games, http://top100.ign.com/2005/001-010.html.

 58. KENT, *supra* note 54, at 462.

 59. Blood was disabled on the SNES and Genesis versions of the games, although the Genesis version contained a prompt screen which allowed players to enter the "Blood Code" that would enable the blood splatter sprites.

helpless, inert opponent. These "finishing moves" depicted acts such as ripping out the opponent's still-beating heart, burning the opponent down to a charred skeleton, electrocution, and tearing off the opponent's head in order to yank out the spinal column. Some of the controversial aspects of *Mortal Kombat* could be seen as references to popular films, which had not drawn nearly as much criticism or outrage.[60]

Night Trap, released in 1993 for the Sega CD, was one of the first games to utilize full-motion video (FMV).[61] The game was, as the producing company Digital Pictures, Inc. described it, a "spoof on slasher [] and vampire films," as is evident from the game's campy box art.[62] In the game, players take on the role of a government task force to save a house full of teenage girls from blood-drinking vampires. The perceived gore factor comes in when a player failing to properly trap one of the vampires, thus allowing the vampire to capture one of the girls. The most infamous of these failures includes the "nightgown scene,"[63] in which the vampires subdue one of the teenage girls in said attire and put a collar around her neck that supposedly drains her blood (although no dripping blood is actually visible).

Night Trap initially enjoyed moderate success, selling 130,000 copies before Senator Joe Lieberman conducted his hearings and began sending complaint letters to retailers.[64] In response to receiving letters from Senators Lieberman and Kohl in which they described *Night Trap* as "deeply offensive to women," Toys-R-Us and Kay-Bee Toys, two of the nation's then-largest toy chains, pulled the game from their shelves in December of 1993.[65]

---

60. For discussion about film references, see *supra* note 56. As for my claim that the films referenced by *Mortal Kombat* did not draw as much controversy as the game, this should be clear from the fact that the films in question never sparked congressional hearings, although *Indiana Jones and the Temple of Doom* was catalytic in the MPAA's creation of its new PG-13 rating as an intermediary rating between PG and R. *See* Richard Zoglin, *Gremlins in the Ratings System*, TIME, June 25, 1984, at 78.

61. For a discussion of the development of the interactive video technology developed by Tom Zito, founder of Digital Pictures, see KENT, *supra* note 54, at 271–274.

62. Edmund L. Andrews, Industry Set to Issue Video Game Ratings As Complaints Rise, N.Y. TIMES, Dec. 9, 1993, at A1.

63. Graeme Browning, *Push-Button Violence*, THE NAT'L J., Feb. 26, 1994, at 458.

64. Daniel Carter, *Battle Against Risque Video Games Wages On After 20 Years*, U. WIRE, Aug. 12, 2005.

65. Browning, *supra* note 63.

Exhibit 2: *Night Trap*[66]

Lieberman's actions marked the point at which a Sword of Damocles appeared over the video game industry. As one article at the time read, "Sen. Joseph I. Lieberman joined Captain Kangaroo, parents and teachers Wednesday to give the video game industry a high-level ultimatum: Put warning labels on sexually explicit or violent video games, or the government will force you to do it."[67] Just hours prior to the hearings, "representatives of several large game manufacturers sought to partially defuse the bad publicity by announcing that the industry had decided to endorse a ratings system."[68] Later that day, during the hearings, the industry "pledged to set up a ratings system by Christmas 1994."[69] This pledge led to the formation of the ESRB,[70] which virtually

---

66. NIGHT TRAP (Digital Pictures 1992). Note the "MA-17 Rating" (Mature Audiences—17 and older) placed on the cover as part of Sega's pre-ESRB ratings scheme.

67. Lightman, *supra* note 51.

68. KENT, *supra* note 54, at 469.

69. Evenson, *supra* note 53.

70. *See* Andy Chalk, *Inappropriate Content: A Brief History of Videogame Ratings and the ESRB*, THE ESCAPIST, July 20, 2007, http://www.escapistmagazine.com/articles/view/columns/the-needles/1300-Inappropriate-Content-A-Brief-History-of-Videogame-Ratings-and-the-ESRB.2.

parallels the self-censorship and regulation of raised eyebrows the film industry underwent with the development of the MPAA to avoid more onerous government intrusion. At this point in the history, though, there had not been any litigation of video games that determined the First Amendment boundaries of the medium, and as such, new gaming controversies continued to the shape the debate as the 1990s marched on.

C.   *Doom and Columbine*

The video game censorship debate reached a blaring crescendo as violent games took a large amount of blame in the wake of youth violence and school shootings that marked the late '90s. Much like the social anxiety in the evolving American culture during the Great Depression that precipitated film industry regulation, a number of high profile games accompanied by equally notorious crimes created a political atmosphere that set the tenor of the debate.

In 1993, id Software (sic) released *Doom* for home computers. *Doom* had a negligible story which put the player in the shoes of a "space marine" on Mars fighting demons and the like.[71] Today, the term "first-person shooter" is used to describe this gameplay setup, but because of the explosive popularity of *Doom*,[72] the term "Doom clone" was often used in the mid '90s to describe the genre.[73] The game was considered a breakthrough in virtual reality technology with its effective rendering of three-dimensional environments on consumer-grade computers.[74]

Relative to other games at the time, *Doom* was very violent. Enemies cried out in agony as they were felled in a spray of pixilated blood. Difficulty settings in *Doom* were given names such as "I'm too young to die" for easy and "Ultra-violence" for very hard (which is a somewhat obtuse film reference).[75] However, it would be a mistake to think that such film-inspired, alien-killing violence alone drew in the game's fans.[76] The creators of *Doom* at id Software were aware that with

---

71. The only plot details for the game were given in the instruction manual. DOOM (id Software 1993).

72. Vanessa Ho, *For Players, Doom's Day is Now*, ORLANDO SENTINEL, Dec. 23, 1994, at E1 ("More than 10 million people worldwide play *Doom* . . . .").

73. Wikipedia.org, First Person Shooter, http://en.wikipedia.org/wiki/Doom_clone (last visited Mar. 8, 2010).

74. *Id.*

75. The use of the phrase "ultraviolence" in *Doom* is likely a reference to the use of the word in Stanley Kubrick's film "A Clockwork Orange" based on the novel by Anthony Burgess. *See* A CLOCKWORK ORANGE (Warner Bros. 1972).

76. A game that exemplifies this is *Fight Club*. Based on the eponymous film, *Fight Club* was generally not well-received by the gaming community. *See, e.g.,* Greg Kasavin, *Fight Club Review*, GAMESPOT, Nov. 11, 2004, http://www.gamespot.com/xbox/action/fightclub/review.html?tag=tabs;reviews; Garnett Lee, *Fight Club*, 1UP, Nov. 22, 2004,

Exhibit 3: *Doom*[77]

their first foray into shooting games, *Wolfenstein 3D*, there were some players who modified the elements of the game to personalize it.[78] When id made *Doom*, they took a modular approach to the game's development, allowing players who wanted to customize the game to do so easily.[79] Whereas *Wolfenstein* was not designed to be expanded, the software architecture of *Doom* encouraged customization and expansion with the use of "Doom WADs."[80]

The use of Doom WADs allowed players' creativity to flow. Players could design their own levels, replace enemy sprites with their own animations, change the appearance of the weapons, and insert their own sound effects and music. Some of the more notable WADs included content from popular culture touchstones as *Ghostbusters*, *Aliens*, *South Park*, and *Pokémon*.[81] In large part, it was the ability to customize *Doom* that led to one of the biggest controversies in video gaming history.

---

http://www.1up.com/do/reviewPage?cId=3136793&did=1; Douglass C. Perry, *Fight Club*, IGN, Dec. 15, 2004, http://xbox.ign.com/articles/566/566197p1.html.

77. DOOM (id Software 1993).

78. *See*, *e.g.*, The Wolf 3D Dome, Editing Introduction, http://www.wolfenstein3d.co.uk/editing_intro.htm (last visited Nov. 23, 2009). For examples of *Wolfenstein 3D* modifications, see ModDB, Wolfenstein 3D Mods, http://www.moddb.com/games/wolfenstein-3d/mods.

79. Wikipedia: Doom WAD, http://en.wikipedia.org/wiki/Doom_WAD (last visited Mar. 8, 2010).

80. The name for the data package known as a WAD is an acronym for "Where's All the Data?" *Id.*

81. Wikipedia: Doom (video game), http://en.wikipedia.org/wiki/*Doom*_(video_game) (last visited Mar. 8, 2010).

One such creator of Doom WADs was Eric Harris, who along with Dylan Klebold killed thirteen people in the 1999 Columbine High School massacre. Harris' WAD for *Doom II* is still widely available on the Internet.[82] Harris modified the animations in his WAD to include more blood and the text file included with it is filled with hyperbole such as "KILL 'EM AAAAALLLL!!!!!" As was said on one *Doom* website, these things "which would normally be nothing more than adolescent juvenilia, carry a certain premonitory weight."[83]

In the wake of the Columbine shootings, video games took a more prominent role in the cultural and political debate. In the months that followed, video game censorship became part of the 2000 presidential campaign, with vice-presidential candidate Lieberman proclaiming in his acceptance speech at the Democratic National Convention that "[n]o parent in America should be forced to compete with popular culture to raise their children."[84] Presidential candidate Ralph Nader also chimed in, saying, "Our children are too precious a resource to be turned over to a bunch of violent, addictive, pornographically oriented corporations whose CEOs get invited to diplomatic dinners at the White House."[85] Then-Governor George W. Bush took a more laissez-faire approach, stating that there needed to be more self-regulation of the entertainment industry and that responsibility for keeping objectionable material out of the hands of minors lies with parents rather than government.[86]

Anti-violence attorney Jack Thompson also began to gain national prominence at this time, entering the debate and adding to the legal wrangling.[87]

D.   *Jack Thompson and Grand Theft Auto*

No discussion of video game censorship would be complete without discussing Florida attorney Jack Thompson. Thompson has been at the forefront of many of the video gaming world's biggest controversies and has been a primary voice of opposition to explicit game content.[88]

---

82. Harris' file "UACLabs.wad" is available on sites such as Doomworld.com, 10 Most Infamous WADs, http://www.doomworld.com/10years/bestwads/infamous.php.

83. *Id.*

84. Eric Nagourney, *They Want Your MTV*, N.Y. TIMES UPFRONT, Oct. 16, 2000, at 12.

85. *Id.*

86. *Id.*

87. In the months that followed the Columbine attack, Jack Thompson appeared a guest on television news shows. *E.g.,* The Edge with Paula Zahn, Fox News (Jan. 13, 2000) and Talkback Live, CNN (Sep. 14, 2000).

88. Jack Thompson is an integral figure in the history of the debate on video game censorship, and the facts surrounding his disbarment are directly related to his interactions with the video game industry. Therefore, a discussion of those events is necessary for a complete chronology of the history of video game censorship. Discussion of Jack Thompson's legal troubles are not presented for the purpose of personally attacking him, but to chronicle

Thompson first gained notoriety by getting 2 Live Crew's album "As Nasty As They Wanna Be" banned in Broward County and declared obscene by a federal district court judge.[89] He became involved with video games in 1997, when fourteen year old Michael Carneal opened fire at his school in Paducah, Kentucky, killing three and wounding five others. Thompson filed suit for the parents of the three slain girls against a number of video game, entertainment, and Internet pornography companies.[90] They argued that these companies were responsible for Carneal's behavior under theories of negligence, violations of RICO, and strict liability for inherent danger of their products' designs.[91] In the plaintiffs' complaint, they mention specific games that Carneal played, including *Doom*, *Quake*, *Wolfenstein*, *Redneck Rampage*, *Nightmare Creatures*, *Mech Warrior*, *Resident Evil*, and *Final Fantasy*.[92]

The judge ruled that:

> [T]he theories of liability sought to be imposed upon the manufacturer of a role-playing fantasy game would have a devastatingly broad chilling effect on expression of all forms. It cannot be justified by the benefit Plaintiff claims would result from the imposition. The libraries of the world are a great reservoir of works of fiction and nonfiction which may stir their readers to commit heinous acts of violence or evil. However, ideas expressed in one work which may drive some people to violence or ruin, may inspire others to feats of excellence or greatness. As was stated by the second Mr. Justice Harlan, 'one man's vulgarity is another man's lyric.' Atrocities have been committed in the name of many of

one of the most important and recognizable figures in the debate on video game censorship and child protection.

89. The judge's decision was later overturned on the grounds that the Broward County Sherriff's Department failed to show that the album lacked artistic value. Luke Records v. Navarro, 960 F.2d 134, 139 (11th Cir. 1992). The test from *Miller v. California*, 413 U.S. 15, 24 (1973), applied in *Luke Records* holds that for material to be considered obscene: (a) the average person, applying contemporary community standards would find that the work, taken as a whole, appeals to the prurient interest; (b) the work depicts or describes, in a patently offensive way, sexual conduct specifically defined by the applicable state law; and (c) whether the work, taken as a whole, lacks serious literary, artistic, political, or scientific value. *Miller*, 413 U.S. at 21.

90. Defendants in the case ranged from Meow Media, Inc., d/b/a www.persiankitty.com, Network Authentication Systems, Inc., d/b/a www.adultkey.com, www.porntech.com, Midway Home Entertainment, Apogee Software, Ltd., ID Software, Inc., Acclaim Entertainment, Inc., GT Interactive Software Corp., Interplay Productions, Inc., Nintendo of America, Sega of America, Inc., Virgin Interactive Media, Activision, Inc., Capcom Entertainment, Inc., Sony Computer Entertainment d/b/a Sony Interactive Studios America, Lasersoft, Inc., Williams Entertainment, Inc., Time Warner, Inc., Polygram Film Entertainment Distribution, Inc., Island Pictures, Palm Pictures and New Line Cinema, Defendants. Joe James v. Meow Media, Inc., 90 F. Supp. 2d 798 (W.D. Ky. 2000).

91. *See generally id*.

92. James v. Meow Media, 300 F.3d 683, 687 (6th Cir. 2002), *cert. denied*, James v. Meow Media, 537 U.S. 1159 (2003).

civilization's great religions, intellectuals, and artists, yet the first amendment does not hold those whose ideas inspired the crimes to answer for such acts. To do so would be to allow the freaks and misfits of society to declare what the rest of the country can and cannot read, watch and hear.[93]

The District Court's decision was affirmed by the Sixth Circuit.[94] This suit, while important because of the finding of no legally significant causality between games and violence, was more of a footnote in Jack Thompson's career. He became most famous for his involvement in litigation surrounding the *Grand Theft Auto* series.

The original *Grand Theft Auto* was released in 1997. It chronicled the rise of a criminal underling through the ranks of the mafia. By stealing cars and carrying out mafia hits, the player gains money and status. The visuals were not particularly impressive, giving players a top-down view of the game's fictional setting, Liberty City. The real appeal of *Grand Theft Auto* was not visuals or gameplay, but the possibility of committing random crimes and generally terrorizing the residents of Liberty City.[95] The game received lukewarm to good reviews.[96]

The *Grand Theft Auto* franchise received two mission expansion packs and an official sequel in the same top-down format before the series was overhauled.[97] In 2001, *Grand Theft Auto III* was released and hailed as a revolutionary game.[98]

---

93. *Meow Media*, 90 F. Supp. 2d at 818–19 (quoting Watters v. TSR, Inc., 715 F. Supp. 819, 822 (W.D. Ky. 1989)).

94. *Meow Media*, 300 F.3d at 687.

95. Top-down games have been seen in video gaming for quite some time before Grand Theft Auto's release, with titles such as the arcade classic Gauntlet, released by Atari in 1985.

96. *See, e.g.,* GAMESPOT, GRAND THEFT AUTO REVIEW FOR THE PLAYSTATION, http://www.gamespot.com/ps/adventure/grandtheftauto/review.html; GAMESPOT, GRAND THEFT AUTO REVIEW FOR THE PC, http://www.gamespot.com/pc/adventure/grandtheftauto/review.html?mode=web&tag=tabs;reviews.

97. Mission expansions include Grand Theft Auto: London '69 and Grand Theft Auto: London '61. The sequel was (obviously enough) dubbed Grand Theft Auto 2.

98. IGN Rating: 9.6 out of 10. Doug Perry, *Grand Theft Auto III Review*, IGN, http://ps2.ign.com/articles/165/165548p1.html ("The game is absolutely, insanely good, and is truly one of the best titles of the year, on PlayStation 2, or on any system.") *See, e.g.*, GAMESPOT, GRAND THEFT AUTO III REVIEW, http://www.gamespot.com/ps2/action/grandtheftauto3/review.html?mode=web&tag=tabs;reviews.

Exhibit 4: *Grand Theft Auto*[100]
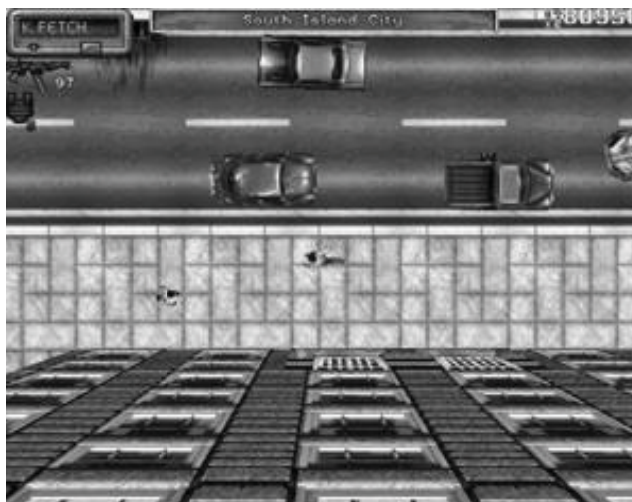
Whereas the previous *Grand Theft Autos* relied on sprite animations hurrying around on a background image of a street, *Grand Theft Auto III* was rendered in full 3D, and replacing the static top-down camera angle was a swooping third-person perspective at eye-level with the player.[99] This change in the visual structure of the game was ultimately the reason for the increase in controversy between *Grand Theft Auto II* and *III*.[101]

The more cinematic presentation put the player much closer to the violence. With actors like Frank Vincent, Michael Madsen, Joe Pantoliano and Michael Rapaport providing their voices for the story's profanity-laden cut scenes, the game was highly evocative of films like *The Godfather* and *Goodfellas*.[102] The player in *Grand Theft Auto III*, however, does not find himself bound by the narrative structure of the game. As in earlier games in the series, pedestrians can be killed for cash, weapons can be purchased, prostitutes can be picked up and paid to gain health and subsequently killed for a refund.[103]

The makers of *Grand Theft Auto*, Rockstar Games, a division of

---

99. In its original release on the PlayStation 2, the camera followed the player from behind while on foot and multiple points of view were able to be selected while driving stolen cars (driver's point of view, behind the car, from a helicopter).

100. GRAND THEFT AUTO (Rockstar Games 1997).

101. Without the increase in visual realism, controversy about the content of the game would be in the same realm as that of in the case of *Custer's Revenge*: anger over what the game is nominally supposed to represent, rather than what the visuals depict in a discernable manner. *See* Jerry Kirshenbaum, *Fun(?) and Games*, SPORTS ILLUSTRATED, Nov. 1 , 1982, at 16.

102. A cut scene in a video game is a non-interactive portion of the game used to advance the story, *i.e.* a film clip within the presentation of the game.

103. No actual sex was ever shown in *Grand Theft Auto III*.

Exhibit 5: *Grand Theft Auto IV*[105]

Take Two Interactive, continued to push the envelope with the next installment of the series in *Grand Theft Auto: Vice City*, released in 2002. Set in a fictionalized 1980s-era Miami, the game drew heavily from sources like *Miami Vice* and the Brian DePalma version of *Scarface*.[104]

Vice City was followed up by *Grand Theft Auto: San Andreas* in 2004. *San Andreas*, set in a fictionalized Southern California, was responsible for arguably the biggest controversy of the series: "Hot Coffee." In June 2005, hackers reverse engineered a PC version of the game and found sexual content within the source code that was not accessible during gameplay but was never taken out during development.[106] After the content was made public, hackers created modification files for the PC version and Action Replay codes for consoles (PlayStation 2 and Xbox) to make the "Hot Coffee" minigame accessible.[107]

Grand Theft Auto: San Andreas was originally released with an ESRB rating of M (Mature), but the M rating was replaced with AO (Adults Only) after the discovery of the hidden "Hot Coffee" content. ESRB

---

104. As a reference to the film *Scarface*, the protagonist of *Grand Theft Auto: Vice City*, Tommy Vercetti can enter an apartment and find a bloody bathroom with a chainsaw.

105. GRAND THEFT AUTO IV (Rockstar Games 2008). As is evident from comparison to the previous screenshot from the original Grand Theft Auto, technological advances and an increase in the market size of the video game industry has allowed for exponential changes in the rendering of characters and environments in games.

106. The term "Hot Coffee" refers to the part of the game where the protagonist's girlfriend invites him into her home for "coffee." The minigame would have occurred at this point in the game, were it to be accessible. The inaccessible game segment portrays the protagonist CJ engaging in sexual movements with his girlfriend, but the two are fully clothed.

107. Seth Schiesel, Video Game Known for Violence Lands in Rating Trouble Over Sex, N.Y. TIMES, July 21, 2005, at A1.

Chairman Patricia Vance said that the "credibility and utility" of the ESRB M Rating had been "seriously undermined."[108]

Major retailers like Wal-Mart and Target immediately pulled *San Andreas*,[109] and eventually the game was re-released with an M rating after the "Hot Coffee" source code had been taken out.[110] This was quite significant from an economic standpoint considering that between 2001 and 2005, the *Grand Theft Auto* franchise had sold more than 21 million copies and generated over $924 million in revenue.[111] There were also attempts to make political hay out of "Hot Coffee," with Senator Lieberman demanding that Take Two allow independent analysis of the *Grand Theft Auto: San Andreas* source code and Hillary Clinton promising to introduce new legislation to prevent the sale of violent video games to minors.[112] "Thompson claims he prepped Clinton for the press conference that she had on the issue."[113]

Regarding Jack Thompson's further involvement with *Grand Theft Auto*, in 2002, 17 year-old JoLynn Mishne was bludgeoned with a bedpost and stabbed to death by 16 year-old Dustin Lynch.[114] Thompson, acting in his capacity as attorney for Mickey Mishne, the father of the slain girl, asked to submit an amicus brief arguing that Dustin Lynch was obsessed with *Grand Theft Auto III* and that the manufacturers of the game were accomplices in JoLynn's murder.[115] The prosecutor in the case compared the theory to that of the "Twinkie defense" raised by the man who killed Harvey Milk and San Francisco Mayor George Moscone.[116]

In October of 2003, Thompson filed suit in Tennessee against Sony (in its capacity as the manufacturer of the PlayStation 2) and Take Two for the victims of two teenage brothers who had pled guilty to

---

108. Brooks Boliek, *On Capitol Hill, It's All About Food, Hot Coffee*, THE HOLLYWOOD REPORTER, July 26, 2005, http://www.hollywoodreporter.com/hr/search/article_display.jsp?vnu_content_id=1000991491.

109. Lisa Baertlein, *Parents Group Urges Recall of Video Game 'GTA'*, REDORBIT, July 19, 2005, http://www.redorbit.com/news/scifi-gaming/180210/parents_group_urges_recall_of_video_game_gta/index.html ("A media watchdog group . . . has demanded . . . Rockstar Games recall "Grand Theft Auto: San Andreas," the blockbuster title at the center of a swarm over a hack that helps players unlock a sexually explicit mini-game.").

110. Ben Fritz & Nick Vivarelli, *'Manhunt' on Hold*, DAILY VARIETY, July 16, 2007, at News 4.

111. Schiesel, *supra* note 107, at A1.

112. Baertlien, *supra* note 109.

113. Priya Ganapati, *Take Two Goes After Chief Critic*, THESTREET.COM, Mar. 16, 2007, http://www.thestreet.com/_googlen/newsanalysis/techgames/10345024.html?cm_ven=GOOGLEN&cm_cat=FREE&cm_ite=NA.

114. Stephen Hudak, Should Video Game Share Blame? Father of Slain Medina Girl Says Manufacturer is Accomplice, CLEVELAND PLAIN DEALER, Feb. 21, 2003, at B1.

115. *Id.*

116. *Id.*

endangerment, assault, and reckless homicide.[117] The brothers were said to be compulsive *Grand Theft Auto* players, and Thompson's argument was that the manufacturers either knew or should have known that the game would cause copycat violence.[118] Later that month, the case was removed to the U.S. District Court for the Eastern District of Tennessee, and two days after that the plaintiffs filed for voluntary dismissal.[119]

In 2005, Thompson once again took on Take Two, this time for their game *Bully*. *Bully* can best be described as toned-down version of *Grand Theft Auto* for kids. The game features the same game mechanics as the *Grand Theft Auto* series, except it takes place at a boarding school, and features milder language, no killing, no hiring of prostitutes, and the theft of vehicles was limited to other children's bicycles and skateboards.

Calling the game a "Columbine simulator," Thompson brought suit against Take Two and Rockstar, claiming that *Bully* violated Florida's nuisance laws.[120] "On October 13, [2005,] Judge Ronald Friedman ruled that the game did not qualify as a 'public nuisance' under the pollution law invoked in Thompson's lawsuit and allowed the game's release. The judge noted in court that 'Bully' did contain some violence but 'less than we see on television every night.'"[121]

Not to be deterred, Thompson yet again dragged the makers of *Grand Theft Auto* into court in September of 2006 for another soon-to-be unsuccessful suit. This time, it was on behalf of three members of the Posey family, whose relative Cody Posey was "convicted of killing his three family members with shots to the head on the Hondo Valley ranch of ABC newsman Sam Donaldson where the family worked and lived."[122]

The $600 million suit against Cody Posey, Sony, and Take Two alleged that Posey played *Grand Theft Auto: Vice City* "obsessively" for months leading up to the shootings and that the game made Cody an "effective killer."[123] Thompson had contacted Cody's attorney, Gary

---

117. Hamel, et al. v. Sony Computer Ent., et al., No. 28,613-III (Cocke County Cir. Court of Tenn. 2003).

118. Posting of Michael McCann to The Situationist blog, http://thesituationist.wordpress.com/2007/01/25/ (Jan. 25, 2007); Wikipedia, Jack Thompson (activist), http://en.wikipedia.org/wiki/Jack_Thompson_(activist).

119. Wikipedia, Jack Thompson (activist), http://en.wikipedia.org/wiki/Jack_Thompson_(activist).

120. Mike Musgrove, *Florida Judge Wants to See "Bully" in Court*, WASH. POST, Oct. 12, 2006, at D05.

121. Paul K. McMasters, *Violence and Video Games: Censors are Jumping the Gun*, DAILY RECORD (BALTIMORE, MD), Oct. 27, 2006, at Commentary.

122. Rene Romo, *Video Game Maker Sued in Deaths; Relatives of Posey's Victims Say Grand Theft Auto Helped Turn Teenager into a Killer*, ALBUQUERQUE J., Sept. 26, 2006, at D1.

123. *Week in Review*, SANTA FE NEW MEXICAN, Oct. 1, 2006, at C-4.

Mitchell, "numerous times" during the trial, "urging Mitchell to highlight *Grand Theft Auto* in Posey's defense."[124] Mitchell, however, did not acquiesce to these requests, saying, "I just didn't find it had any merit whatsoever."[125]

By March of 2007, Take Two was weary of Thompson suits holding up their business. With two new controversial games about to be released, *Grand Theft Auto 4* and *Manhunt 2*, Take Two filed suit against Thompson to prevent him from delaying the release of their upcoming games, claiming that allowing a delay would violate their First Amendment rights.[126] By April, Take Two and Thompson settled, effectively neutering Thompson.[127]

Ultimately, because of a number of legal complaints regarding Thompson's tactics in these and other suits, the Florida Supreme Court ordered Thompson disbarred for life,[128] but Jack Thompson's quixotic campaign against violent games left its mark on the censorship debate, elevating the dialogue to a sensational level with his bombastic legal tactics and fiery, self-destructive end. Jack Thompson was by no means a small player in this debate: one bill he helped write (an amendment to Utah's Truth In Advertising Act that would have punished retailers who sold violent games to minors) passed by wide margins in the Utah House and Senate, although it was later vetoed by Utah Governor John Huntsman.[129]

III.   WHY VIDEO GAMES SHOULD NOT BE TREATED DIFFERENTLY THAN FILMS

While the interactive aspect of video games distinguishes it from more passive forms of consumptive entertainment, there are a number of reasons why video games should not be treated differently as a medium of expression. Because of the strict scrutiny in judicial review of speech regulation, a government entity seeking regulation must jump a high hurdle of justification—presumptive invalidity—to treat video games differently than other media.

---

124. Romo, *supra* note 122.

125. *Id.*

126. Priya Ganapati, *Take Two Goes After Chief Critic*, THESTREET.COM, Mar. 16, 2007, http://www.thestreet.com/_googlen/newsanalysis/techgames/10345024.html?cm_ven=GOO GLEN&cm_cat=FREE&cm_ite=NA..

127. *Id.*

128. *Jack Thompson: Disbarment Timeline*, GAMEPOLITICS.COM, Sept. 26, 2008, http://www.gamepolitics.com/2008/09/26/jack-thompson-disbarment-time-line.

129. Mike Fahey, *Utah Governor Smacks Down Thompson Bill*, KOTAKU, Mar. 26, 2009, http://kotaku.com/5185169/utah-governor-smacks-down-thompson-bill.

A. Violent and Sexual Content in Video Games is Distinguishable from Pornography and Obscenity.

The parallels between the development of self-censorship regimes in the film and video game industries should be clear by now, but the question of how to treat specific types of content is not answered by simply comparing the histories. For example, unlike films in general, content that is pornographic has enjoyed less than strict scrutiny protection from the Court. This is important for a discussion of video game censorship both in terms of sexual content in games and how other objectionable content (i.e. violence) might be treated.

Every state has some regulation of pornographic and obscene material as it relates to children.[130] Aside from the issue of child pornography, much of this body of law involves giving or selling pornography to minors, the prohibition of which is constitutional under *Ginsberg v. New York*.[131] The analysis in *Ginsberg* specifically carved out restrictions on minor's access to content on the basis of whether the material could be obscene for minors but not for adults.[132]

There are clear limits to the extent to which the government may regulate media content in order to protect children. Overturning a ban on sexually oriented telephone calls, the Supreme Court held in *Sable Communications v. FCC*, "The Government may . . . regulate the content of constitutionally protected speech in order to promote a compelling interest if it chooses the least restrictive means to further the articulated interest."[133]

This analysis of pornographic and obscene material has limited applicability to video games. Although, as previously mentioned, there is no free speech right to obscenity, the Court "has carefully limited obscenity [restrictions] to sexual content."[134] In the context of video game censorship, this means that most obscenity restrictions for media are not applicable—the main concern in video game legislation and the corresponding jurisprudence is violent content, as is evident from the Video Game Health Labeling Act and the 1993 Congressional hearings on video games.[135] Attempts have been made to analogize violence to obscene sexual content, but courts have resisted, holding that "the standards that apply to obscenity are different from those that apply to

---

130. *See, e.g.,* ALASKA STAT. § 11-61-128 (2009), COLO. REV. STAT. § 18-7-502 (2009), ILL. COMPILED STAT. ANN. § 5-11-21 (2009).

131. Ginsberg v. New York, 390 U.S. 629, 641–42 (1968) (holding that it was not irrational for the New York Legislature to find sexually explicit material harmful to minors).

132. *See id.* at 639 (upholding a ban on materials that are obscene as to minors but not obscene as to adults).

133. Sable Comms. of California v. FCC, 492 U.S. 115, 126 (1989).

134. Video Software Dealers Ass'n v. Schwarzenegger, 556 F.3d 950, 959 (9th Cir. 2009).

135. See *infra* Section III-B for a discussion of the 1993 Congressional hearings.

violence."[136]

It is true that some games exist that would fall under this category of regulation. One recent example is the Japanese PC game *Rapelay*, the prime objective of which is to engage in sexual violence. The game was quickly banned on Amazon.com's Marketplace after the company discovered the game being sold by individuals.[137] Such a game occupies a position on the far end of the bell curve, both in terms of extremity of content and public availability here in the United States. The regulations in this country, such as the Video Game Health Labeling Act, mean to target much more commonplace games that do not contain graphic sexual content. Rather, the games at issue contain only violence and less extreme sexual content, rendering games like *Rapelay* a non-issue.

Gaming has seen an increase in sexual content over the last few years. The game studio Bioware, for example, prominently features sex as an integral aspect of the narrative in games like *Mass Effect* and *Dragon Age: Origins*, but the evolution of such content is unlikely to reach a level of explicitness worthy of *Ginsberg* review below strict scrutiny, because all game console manufacturers in America (Sony, Microsoft, and Nintendo) do not allow AO-rated to be licensed for their consoles, which effectively limits the production and distribution of games beyond the M rating.[138] Consequently, this limits the sexual content to corresponding with that in R-rated films. If a ratings system were devised to deal with content that is actually obscene for minors, it would have virtually no impact on the game makers, sellers, or consumers in this country.

The vast majority of controversial video games, as the examples in this article show, reflect a range of content that is much more analogous to content seen in PG-13 and R-rated films than it is to the content seen in pornography or obscenity—the courts have held this to be the case in reviewing law limiting minors' access to sexually explicit games.[139] As the court in *Entertainment Software Association v. Schwarzenegger* held, "The Supreme Court has carefully limited obscenity to sexual content. Although the Court has wrestled with the precise formulation of the legal test by which it classifies obscene material, it has consistently addressed obscenity with reference to sex-based material."[140] If the games

---

136. Eclipse Enters. v. Gulotta, 134 F.3d 63, 67 (2d Cir. 1997) (striking down an ordinance that restricted the sale of baseball cards featuring murderers and dictators to minors).

137. Benedict Moore-Bridger, *MP Calls for Rape Game to be Banned*, LONDON EVENING STANDARD, Feb. 25, 2009.

138. Sinclair, *supra note* 7.

139. See *infra* Sections V, VI for a discussion of these cases.

140. Video Software Dealers Ass'n v. Schwarzenegger, 556 F.3d 950, 959 (9th Cir. 2009) (citing Roth v. United States, 354 U.S. 476 and Memoirs v. Massachusetts, 383 U.S. 413

at issue had sexual content that fit into *Ginsberg's* classification of material inappropriate for minors, there may be validity to mandatory labels or warnings. The definition of "sexually explicit games" in Illinois' Sexually Explicit Video Game Law (SEVGL) included games that:

> [T]he average person, applying contemporary community standards would find, with respect to minors, is designed to appeal or pander to the prurient interest and depicts or represents in a manner patently offensive with respect to minors, an actual or simulated sexual act or sexual contact, an actual or simulated normal or perverted sexual act or a lewd exhibition of the genitals or post-pubescent female breast.[141]

But the examples in the legislative history were the same film-inspired scenes that can be found in any number of R-rated films, and the court found the application of the *Ginsberg* and *Miller* tests were unconstitutionally vague because of the omission of the qualification of "as a whole" from the definition of sexually explicit games.[142]

As such, the video game censorship debate should follow the trajectory of the film industry as a whole insofar as the sexual content of games is not more explicit than films, and violence is the focus of legislation. Otherwise, the industry would be subject to laws analogous to those governing pornographic and obscene material, but no current market paradigms indicate this is even a remote possibility.

B.   Violent Game Content is Similar to Violent Film Content.

As can be seen from the examples in Section II, video games draw a large amount of inspiration from contemporary and classic cinema. These references span from *Indiana Jones* and *Scarface* to *The Godfather*, *Clockwork Orange*, and the films of Bruce Lee. In fact, a common goal of modern video game development is to make the gaming experience as close to the cinematic experience as possible.[143] The content in the multibillion-dollar video game industry has more in common with Hollywood than the adult entertainment industry.

Apart from content, there is also the question of the effect of the media. A recent set of studies by Dr. Brad Bushman of Michigan and Dr. Craig Anderson of Iowa State measured the effect of exposure to violent media on helping behavior by exposing participants to said media

(1966)).

141. 720 ILL. COMP. STAT. 5/12B-10.

142. Entm't Software Ass'n v. Blagojevich, 404 F. Supp. 2d 1051, 1079–80 (N.D. Ill. 2005) (discussing nudity in *God of War* and the application of the *Ginsberg* and *Miller* tests).

143. Two violent games that serve as examples of this point are HEAVENLY SWORD (Ninja Theory 2007) and METAL GEAR SOLID 4 (Konami 2008).

and then staging a fight outside of the testing room.[144] The first study looked at violent video games, and found that while every participant *did* leave the room to help, those who had played twenty minutes of a violent game took statistically significantly longer to respond than those who played non-violent games.[145] The next study involving non-violent PG and violent R films found those who watched the violent films also had statistically significantly delayed reactions in their helping behavior (although no decrease *in* helping behavior).[146]

While the Bushman and Anderson studies are certainly problematic in a number of methodological ways (a blogger pointed out the inability to conduct the film test in a blind fashion, for example) and the element of causality is still suspect, the studies go to show that *both* violent films and games have negative consequences.

The legal question, then, that arises from this commonality of content and effect is, What rationale is there for distinguishing films and video games that passes the test of presumptive invalidity under First Amendment strict scrutiny review? If the film industry was allowed to grow and develop under the self-censorship of MPAA ratings, why aren't voluntary ESRB ratings under regulation by raised eyebrows sufficient to avoid government involvement? Showing that video games deserve less than strict scrutiny First Amendment protection is a very high hurdle for advocates of mandatory labeling systems, which they have not been able to overcome so far. For example, the court in *Entertainment Software Association v. Blagojevich* held, "[Illinois has] failed to show that video games are sufficiently similar to broadcast radio and television, to justify applying a lower standard of review [as in *FCC v. Pacifica*.]"[147]

The problem for advocates of such a censorship regime gets compounded when violent games' positive aspects are found to be just as statistically significant as the socially deleterious ones.

C. *Positive Social Aspects of Violent Gaming*

A reason to be skeptical of attempts to force labels on games, particularly warning labels, is that a positive aspect of violent gaming exists: social interaction.

Many violent games embroiled in controversy contain what is

---

144. Posting of Ed Yong to Science Blogs, Violent Films and Games Delay People From Helping Others, http://scienceblogs.com/notrocketscience/2009/03/violent_films_and_games_delay_people_from_helping_others.php (Mar 16, 2009, 08:30).

145. *Id.*

146. *Id.*

147. Entm't Software Ass'n v. Blagojevich, 404 F. Supp. 2d 1051, 1079 (2005) (citing FCC v. Pacifica, 438 U.S. 726 (1978)).

known as a "strong multiplayer component." When a game has a multiplayer component, it means that the player has the option of playing with others on the same game system (on the same screen) or over the Internet. A strong multiplayer component denotes a game in which the multiplayer component of the game (as opposed to the single-player component) is a primary draw for playing.

There are manifestations of these online networks both for PC games, which tend to be run directly by the companies that make the games,[148] and on the consoles, in which the multiplayer component is facilitated by the console manufacturer.[149]

One of the first successful online multiplayer games was Valve's first-person shooter *Counter-Strike*, released in 2000 as a spin-off of the popular *Half-Life* series.[150] In *Counter-Strike*, a team of terrorists is pitted against a team of counter-terrorist agents in an urban arena. The game allowed for interaction through the use of an in-game text chat system, which could be used to strategize with others on the team or to jibe opponents. This feature enhanced the combat aspect of the game, as was said in a review of *Counter-Strike*, "Games are played in short rounds, and when you're killed, you sit out the round as an invisible observer . . . This creates a strong social aspect, because with 'dead' players chatting, there can be an enormous sense of tension for the remaining players stalking each other."[151]

In the wake of Valve's success came another game franchise that would redefine online gaming: *Halo*.[152]

Developed by Bungie, *Halo* was released in November 2001 as a launch title for Microsoft's first console, the Xbox. *Halo* was one of the driving forces behind the success of the system, selling upwards of 5 million copies.[153]

The story was standard sci-fi fare, placing the player in the role of Master Chief, an armor-clad cyborg Space Marine, fighting the alien

---

148. *E.g.* Valve's "Steam" content delivery system is an example of a PC network for games such as *Half-Life*, *Team Fortress,* and *Left 4 Dead*.

149. On the current generation of systems, Microsoft's multiplayer network is called "XBOX Live," Sony's is called "PlayStation Network," and on the Wii, games use what is titled "Nintendo Wi-Fi Connection."

150. While *Counter-Strike* was one of the first successful *online* competitive multiplayer games, *GoldenEye 007* and *Perfect Dark*, released by Rareware for the Nintendo 64 in 1997 and 2000 respectively, were early examples of successful competitive multiplayer components in violent first-person shooters that did not involve online play.

151. Scott   Osborne,   *Half-Life*:   *Counter-Strike   Review*,   GAMESPOT, http://www.gamespot.com/pc/action/halflifecounterstrike/review.html?om_act=convert&om_clk=gssummary&tag=summary;read-review (Nov. 27, 2000).

152. It is arguable that *Half-Life*'s dark, story-driven first-person gameplay directly influenced *Halo*.

153. Bungie.com,   *Halo   2:   One   Year   Later*,   http://www.bungie.net/News/content.aspx?type=topnews&cid=7139 (Nov. 9, 2005).

Exhibit 6: *Halo 3*[154]

Covenant forces on the artificially created world of Halo (*a la Rendezvous with Rama*).

The story-driven single-player mode was the main draw of the game. There was also the option of playing through the story of *Halo* with two people in a split-screen mode, but the competitive multiplayer portion of the game was fairly weak. Because *Halo* was released before the Xbox Live network launched, players could have multiplayer matches supporting 16 people only by linking systems together with a local Ethernet connection. Because this meant having to have multiple televisions and Xbox consoles in one house, setting up a local Ethernet game of *Halo* was a relatively cumbersome process.

In *Halo 2*, the multiplayer component was drastically stronger, incorporating support for online matches through Xbox Live. Chris Butcher, the Technical Lead for *Halo 2*'s development said,

> For *Halo 2* we had our sights set very high on networking . . . . We thought about the great LAN parties you can have with Halo 1 and decided to try and recreate that awesome experience of having all your buddies over to play, but using Xbox Live instead of having to lug consoles and televisions around.[155]

Halo 2 also added to the interactivity of the multiplayer component by supporting in-game voice chat through the use of a headset attachment to the Xbox controller. This allowed for much more

---

154. All players in multiplayer games of *Halo* are either in armored suits, as is Master Chief in this picture, or are aliens with no human expressions. HALO 3 (Bungie 2007).

155. Luke Smith, *Does Bungie Hate Halo 2?*, 1UP NEWS, Jan. 26, 2007, http://www.1up.com/do/newsStory?cId=3156739.

Exhibit 7: *Gears of War*[158]

spontaneous communication in the game compared to the text chat feature of *Counter-Strike* and other online games.

 Halo 3, released for Microsoft's second game console, the Xbox 360, improved on the multiplayer component in *Halo 2*, including additional modes of online play and more customizable matches. As of February, 2008, "*Halo 3* has tripled *Halo 2*'s number of concurrent multiplayer participants. 5.9 million people have played the game on Xbox Live; 88 percent attempted matchmaking.[156] Currently, there are 1.2 million people playing *Halo 3* each week."[157]

 Another game that took advantage of Xbox Live to create a strong multiplayer component was *Gears of War*. Created by Epic Games, the makers of the successful *Unreal* series of first-person shooters, *Gears of War* was an action shooter game that eschewed the first-person perspective in favor of a third-person over-the-shoulder camera.

 What separated *Gears of War* from other sci-fi shooting games was the severity of the game's violence. The intense combat was accompanied by gallons of blood, much of which splattered on the camera and dripped down the screen.[159] *Gears of War* was a major success for Microsoft and Epic, selling over 5.88 million copies,[160] and on the day of its release, it

---

156. Matchmaking involves the creation of custom game rules for a multiplayer match.

157. Edge Staff, *GDC: Halo 3 and the Importance of Matchmaking*, EDGE, Feb. 20, 2008, http://www.edge-online.com/news/gdc-halo-3-and-importance-matchmaking.

158. In *Gears of War*, menacing chainsaw bayonets are visible on the players' guns. Faces are also visible and show some emotion when death occurs. GEARS OF WAR (Epic Games 2006).

159. Much to the amusement of titillated players and the chagrin of concerned parents.

160. Video: The Fidelity Investments "Leadership in Technology" Executive Speakers Series Proudly Presents Michael Capps (Sept. 18, 2008) *available at* http://www.csc.ncsu.edu/

overtook *Halo 2* as the most popular online game on Xbox Live.[161]

So where does the multiplayer component of these violent games fit into the censorship debate? It's actually very important from a legal standpoint. Legislation that aims to censor violent games is always based on findings by a legislature that violent games are in fact bad for children. For such a law to hold up in court, it must meet the strict scrutiny threshold of presumptive invalidity applied to content-based restrictions, showing itself to be addressing a compelling governmental interest by the least restrictive means.

Like other video game regulations, the Michigan law that led to a court challenge in *Entertainment Software Association v. Granholm* was based on the state legislature's findings that "ultra-violent explicit video games are harmful to minors because minors who play them are more likely to exhibit violent, asocial, or aggressive behavior and have feelings of aggression" and that "there is a causal connection between media violence and aggressive behavior in some children, and that the effects of media violence are 'measurable and long-lasting.'"[162]

The *Granholm* Court correctly granted summary judgment to the plaintiff video game manufacturers, holding that the state of Michigan did not meet its burden to provide "substantial proof," echoing the *Blagojevich* Court's holding that the

> defendants have failed to present substantial evidence showing that playing violent video games causes minors to have aggressive feelings or engage in aggressive behavior. At most, researchers have been able to show a correlation between playing violent video games and a slightly increased level of aggressive thoughts and behavior. With these limited findings, it is impossible to know which way the causal relationship runs: it may be that aggressive children may also be attracted to violent video games.[163]

The court went on to say that the tests created by the state's expert failed to prove that "video games have ever caused anyone to commit a violent act, as opposed to feeling aggressive, or have caused the average level of violence to increase anywhere."[164]

Recently, video game violence was comprehensively studied by Dr.

---

corporate_relations/fi_lit/248.

161. Ellie Gibson, *Gears of War Takes Top Spot in Xbox Live Chart*, GAMEINDUSTRY.BIZ, Nov. 20, 2006, http://www.gamesindustry.biz/articles/gears-of-war-takes-top-spot-in-xbox-live-chart.

162. Entm't Software Ass'n v. Granholm, 426 F. Supp. 2d 646, 649 (E.D. Mich. 2006).

163. *Id.* at 653 (citing Entm't Software Ass'n v. Blagojevich, 404 F. Supp. 2d 1051 (2005)).

164. *Id.* (quoting language used in Am. Amusement Mach. Ass'n v. Kendrick, 244 F.3d 572, 578-79 (7th Cir. 2001)).

Lawrence Kutner and Dr. Cheryl K. Olson, both of the Department of Psychiatry at Massachusetts General Hospital. They published their findings in the book *Grand Theft Childhood: The Surprising Truth About Violent Video Games*. In their study, the pair found that children who play M-rated games are significantly more likely to play games in a social setting than children who don't play M-rated games.[165] Of those boys who reported playing at least one M-rated game "a lot," 32% often or always play with multiple friends in the same room, 22% often or always play with an older sibling, 14% often or always play with friends over the Internet (e.g. PlayStation Network or Xbox Live), and 11% often or always play games with strangers over the Internet.[166]

The authors also found confusing links with bullying and M-rated games: while boys who play M-rated games are more likely to exhibit bullying behavior in school, boys and girls who play M-rated games were also significantly less likely to be the victims of bullying.[167] The authors theorize that this may be connected with the fact that those who play M-rated games tend to do so in groups, which may mean they have better social skills with which to deal with bullies or the fact that they have friends means they are less likely to be singled out for being picked on.[168]

The authors said of their findings that "[w]e can make logical guesses [about the link between problem behavior and M-rated games], but we can't be sure from our research whether violent game play led to these behaviors or vice versa."[169]

One of the most common responses from the children in their study as to why the children play games (although the answer for boys was statistically significantly higher than for girls) is that they enjoy competing and winning.[170] As of January, 2009, 17 of 28 million Xbox owners were active Xbox Live members.[171] Considering the numbers of people (including children) who play games like *Halo*, *Counter-Strike*, and *Gears of War*, online networks such as Xbox Live facilitate the competition discussed in *Grand Theft Childhood*, which is arguably a very positive thing for society.

As was also found in the *Grand Theft Childhood* study, almost 90% of boys and a little over 70% of girls said that they played video games because they enjoyed the challenge of figuring things out (especially

---

    165. LAWRENCE KUTNER & CHERYL K. OLSON, GRAND THEFT CHILDHOOD 130 (2008).
    166. *Id.* at 94.
    167. *Id.* at 101.
    168. *Id.*
    169. *Id.* at 100.
    170. *Id.* at 113.
    171. Tor Thorsen, *28 Million Xbox 360s Sold, 17 Million on Xbox Live*, GAMESPOT, Jan. 6, 2009, http://www.gamespot.com/news/6202733.html.

before other players do).[172] As one researcher said in a study that reached the same conclusions about children enjoying competition, "The kids focused on pride and competition in terms of psychological gain. They said they had more confidence: 'I feel like I did something right.'"[173] This finding is a far cry from the world of games seen by those who want to restrict sales, such Senator Lieberman or Jack Thompson who see violent gaming as a bleak, nihilistic hobby without socially redeeming qualities.

Repeated studies have shown that there is a feeling of accomplishment associated with playing competitive games.[174] The reality is that most popular competitive games are violent in nature, and if we want the benefits of a society in which children are raised to value competition and individual accomplishment, it is incumbent on politicians not to harass the industry that facilitates this social good.

Even if we were to devalue competition and accept "cooperation" as the higher social value, the preceding argument would still hold true. Online gaming networks like Xbox Live and PlayStation Network are rife with cooperative "clans," teams of players who self-organize into intricate hierarchies within a given game or set of games. If the video game industry has to continue to endure legal fights, then those who extol the virtues of cooperation will have to accept the cost that will be imposed on the industry that facilitates *this* social good. As the judge in one of Jack Thompson's suits said, "[I]deas expressed in one work which may drive some people to violence or ruin, may inspire others to feats of excellence or greatness."[175]

This section is not presented necessarily to argue *in favor* of children playing violent games; rather it speaks to the issue in a First Amendment analysis of whether legislatures imposing such regulations can overcome a strict scrutiny examination of their laws. To be sure, there are a number of studies linking games to problematic behavior in clinical settings, including the aforementioned Bushman and Anderson studies.[176] Accepting, arguendo, the validity of conclusions about the negative consequences of violent games, the courts are presented with a commensurability problem in weighing the costs and benefits of violent games, which heavily influences a strict scrutiny analysis. Do the negative consequences outweigh the positive to the point of justifying extra regulation? Are the benefits of violent gaming even *able* to be weighed against the negative consequences?

---

172. KUTNER & OLSON, *supra* note 165, at 113.

173. *Id.* at 125.

174. *See id.* at 113 (discussing other studies that have come to similar conclusions about the feelings of accomplishment associated with video game playing).

175. Joe James v. Meow Media, Inc. 90 F. Supp. 2d 798, 818–19 (W.D. Ky. 2000).

176. Craig A. Anderson, *Violent Video Games: Myths, Facts, and Unanswered Questions*, AM. PSYCHOL. ASS'N, http://www.apa.org/science/about/psa/2003/10/anderson.aspx.

Because laws reviewed by the Court under strict scrutiny are "presumptively invalid" and a "compelling governmental interest" must be shown to be at stake in which the government "narrowly tailors" the law to meet that interest,[177] the fact that there is no absolute agreement about whether violent games are more bad than they are good compared to other violent forms of media and the potentially incommensurate nature of the costs and benefits being weighed means that proponents of a censorship regime cannot overcome the Court's threshold.

D.   Desensitization Will Lead to a Decrease in Political Outrage.

We have seen as a matter of psychological principle that repeated exposure to a stimuli tends to decrease the intensity of the response.[178] Thinking of society as a one big Skinner Box, we can look at the history of other media to discern how operant conditioning (punishment/reward reactions to stimuli) will affect the political atmosphere as video game technology progresses.

There is no question, looking at the history of films, that although there have been periods of social anxiety that led to backlash, the general movement of society has been one of increasing tolerance for objectionable speech. The same can be said of other visual media and literature.[179] Considering the facts surrounding the history of video games, there is no reason to believe that video games will turn out differently in terms of increased tolerance.

In the case of graphics, as can be seen from the development of *Grand Theft Auto*, old games that once caused a stir are soon rendered pixilated, blasé relics by their descendants.[180] With rapidly advancing technology in the game industry, we are increasingly likely to look back and ask, "What was all the fuss about?" when we examine the games that were catalytic in prompting political and legal action. *Night Trap*, for example, is laughably amateurish (technically and cinematically) and non-explicit by today's standards. The idea of this game being released in 2010 and causing a full-scale Congressional inquiry is unfathomable in the same way we would imagine the publishers of *Ulysses* being persecuted for obscenity today.

With this inevitable obsolescence every controversial piece of media is imbued with, it's not unreasonable to think that courts should discount the present social climate in its analysis of video game laws passed by

---

177. *See* Citizens United v. FEC, 2010 U.S. LEXIS 766, 51–52 (discussing the strict scrutiny standard of review).

178. See JOSEPH WOLPE, THE PRACTICE OF BEHAVIORAL THERAPY 100–122, 138–149 (1969) for a discussion of systematic desensitization.

179. *See supra* Sections I, II.

180. *See supra* notes 100, 105 and corresponding pictures.

legislatures in the heat of their populist passion.

As it is with any form of conditioning, associations matter: the social anxiety associated with a medium leads to fear of the medium. As with films during the Great Depression that were feared because of their association with immoral behavior, there is genuine fear of explicit video games because of their association with youth violence. However, because video games are such an integral part of modern entertainment, there really is no comparison between the ratio of Columbine-like video game players and the normal children that play the same games and never once take up arms against their classmates. This lack of violent consequences cannot help but increase the desensitization to violent game content, and in turn will lead to decreased political desire for regulation and labeling.

IV.   EXISTING VIDEO GAME JURISPRUDENCE

Much video game legislation has been introduced in state legislatures and in Congress since Senator Lieberman's hearings, largely as a result of the aforementioned controversies. Some of this legislation was written directly by Jack Thompson.[181] The judicial trend in this area of law is clearly toward non-regulation, resembling the jurisprudence of films—although we shall see in the months to come how the Supreme Court comes down on the issue.[182]

> The Sixth Circuit held that video games were protected free speech under the First Amendment for the purposes of regulating tort liability and stated that "our decision here today should not be interpreted as a broad holding on the protected status of video games." However, the Court did recognize that "most federal courts to consider the issue have found video games to be constitutionally protected [free speech]."[183]

The court recognized that video games are "creative, expressive free speech, inseparable from their interactive functional elements" and as such, they are justified in receiving First Amendment protections.[184]

An example of a major win for the video game industry involved the Sexually Explicit Video Game Law (SEVGL), passed into law in Illinois

---

181. Posting of GamePolitics to Live Journal, http://gamepolitics.livejournal.com/307891.html?thread=23673523 (June 16, 2006, 08:05); Fahey, *supra* note 129.

182. *See* supra note 8.

183. Entm't Software Ass'n v. Granholm, 426 F. Supp. 2d 646, 651 (E.D. Mi. 2006) (citing James v. Meow Media Inc., 300 F.3d 683, 696 (6th Cir. 2002)) (internal citations omitted).

184. *Id.*

by then-Governor Rod Blagojevich in July of 2005.[185] The law required video game retailers to label all sexually explicit video games with a 2x2 inch black and white sign reading "18," with non-compliance resulting in a $500 or $1000 fine, depending on how many violations the retailer has accrued.[186] There was also a corresponding Violent Video Game Law (VVGL) passed.[187] The industry brought suit, and in *Entertainment Software Association v. Blagojevich*, the 7th Circuit upheld a District Court decision to permanently enjoin the enforcement of the laws.[188] As the District Court said, "the legislature has a compelling interest in preventing violent behavior by children, protecting children from violence, and assisting parents in achieving the same goals."[189] But

> [w]hen the state defends a regulation of speech as a means to "prevent anticipated harms," however, "it must do more than simply posit the existence of the disease sought to be cured." Rather, "it must demonstrate that the recited harms are real, not merely conjectural, and that the regulation will in fact alleviate these harms in a direct and material way."[190]

As an example of the problem with the SEVGL, the District Court cited the game *God of War*:

> During the game, there are several scenes depicting women whose breasts are visible. In one scene, the main character is shown near a bed where two bare-chested women are lying. It appears that the main character may have had sexual relations with the women. Because of this one scene, a game such as *God of War*, which essentially parallels a classic book like *The Odyssey*, likely would be prohibited for minors under the SEVGL, because the statute allows a game to be regulated based on one scene without regard to the value of the game as a whole. Such a sweeping regulation on speech—even sexually explicit speech—is unconstitutional even if aimed at protecting minors.[191]

In *Schwarzenegger*, which will be discussed in more detail in the next section, the Ninth Circuit was not amenable to California's fact-finding, holding the state's video game labeling law was unconstitutional and not subject to *Ginsberg* review. [192] The court was highly skeptical of

---

185. 720 ILL. COMP. STAT. 5/12B-25 (2009).

186. *Id.*

187. *Id.*

188. Entm't Software Ass'n v. Blagojevich, 469 F.3d 641, 643 (7th Cir. 2006).

189. Entm't Software Ass'n v. Blagojevich, 404 F. Supp. 2d 1051, 1072 (N.D. Ill. 2005).

190. *Id.*

191. *Id.* at 1080.

192. Video Software Dealers Ass'n v. Schwarzenegger, 556 F.3d 950, 953 (9th Cir. 2009).

the studies used to justify the law, holding:

> [T]he evidence presented by the State does not support the Legislature's purported interest in preventing psychological or neurological harm. Nearly all of the research is based on correlation, not evidence of causation, and most of the studies suffer from significant, admitted flaws in methodology as they relate to the State's claimed interest. None of the research establishes or suggests a causal link between minors playing violent video games and actual psychological or neurological harm, and inferences to that effect would not be reasonable. [193]

These decisions point to a clear judicial preference for non-regulation and skepticism toward the legislative fact-finding used to justify such ratings laws. The 7th Circuit called the District Court's example of *God of War* illustrative of the problem and said of the SEVGL, "These deficiencies are sufficient for this court to conclude that the statute is not narrowly tailored and is overbroad. It is unnecessary for the State to ban access to material that has serious social value for minors to achieve its stated purpose."[194]

What is an example, then, of the "serious social value" contained within the discs of today's video games? Apart from serving as modern learning tools, referencing classical mythology in games such as *God of War* and *Too Human*, modern video gaming is a nexus for large social networks that facilitates interpersonal relations, the development of which is described above. This positive aspect of violent gaming exists in the context of a larger debate about whether it is appropriate to treat game content differently than similar content that appears in films (which doesn't experience similar regulatory threats).

V.   RATINGS AND LABELS AS UNCONSTITUTIONAL CENSORSHIP

A game and its packaging convey information. As per the holding in *Burstyn*, it can hardly be argued that games and the information contained therein do not constitute speech under the First Amendment—Circuit Courts have repeatedly addressed this issue and affirmed that games and their packages are protectable speech.[195] The addition of a warning, rating, or additional description is new information added to the matrix of information being conveyed by the game.

---

193. *Id.* at 964.
194. Entm't Software Ass'n v. Blagojevich, 469 F.3d 641, 650 (7th Cir. 2006).
195. Entm't Software Ass'n v. Granholm, 426 F. Supp. 2d 646, 650–651 (E.D. Mich. 2006) (citing Am. Amusement Mach. Ass'n v. Kendrick, 244 F.3d 572 (7th Cir. 2001) and Interactive Digital Software Ass'n v. St. Louis County, 329 F.3d 954, 959 (8th Cir. 2003)).

Censorship of this speech exists when labels are mandated because the addition of new information means the original content is not able to be released as-is (i.e. the original message has fundamentally changed). If a rating or warning label is mandatory, it would constitutes a content-based restriction on the release of unlabeled games. It might be argued that such an addition is minor and affects the speech very little, but in absolute terms, the mandatory addition of information constitutes a ban on unqualified speech—video game manufacturers are unable to speak without adding additional information to their message.

In *Schwarzenegger*, the 9th Circuit addressed the issue of state-mandated labels (separate from whatever ESRB rating may appear on the games). The state of California argued that the labeling aspect of their law designed to criminalize selling violent games to minors was merely a commercial aspect of retail sales, but the 9th Circuit disagreed.[196] Although labeling and rating games on the exterior of the packaging ostensibly falls under the commercial aspect of the video games at issue, regulation of commercial speech has been upheld by the Court when the state-required inclusions are "purely factual and uncontroversial information."[197] In *Schwarzenegger*, the 9th Circuit's holding that the sale and rental provisions were unconstitutional "negate[d] the State's argument that the labeling provision . . . [was] 'purely factual and uncontroversial . . . .'"[198]

Essentially, it was the subjective nature of content warnings that rendered the California law unconstitutional in *Schwarzenegger*. Such a holding will surely have an effect on Rep. Baca's proposed bill, especially in light of the spurious fact-finding that invariably accompanies video game regulations. Because such labels that describe content as constituting "violence," "gore," or "comic mischief" (as many ESRB descriptions read) are inherently subjective, they do not fall under the Court's category of accepted regulations of commercial speech on a "purely factual and uncontroversial" basis. Nor would such mandatory ratings be purely commercial in the sense of only appearing on the box—many games integrate the ESRB rating into an opening screen when the game is played. Having a mandatory rating would in fact likely end up being integrated into the computer code and audiovisual presentation of the game itself, further blurring the commercial/content distinction. But even if the government-mandated stickers remained solely on the outside of the packaging, they would be unconstitutional insofar as they

---

196. *Schwarzenegger*, 556 F.3d at 966–67.

197. *Id.* at 966 (citing Zaunder v. Office of Disciplinary Counsel, 471 U.S. 626, 651 (1985) (upholding a state's requirement that an attorney include in his advertisements a disclosure that clients may be responsible for litigation costs)).

198. *Id.*

contained messages other than purely factual and uncontroversial information.

Such mandatory ratings on violent games are squarely within the realm of strict scrutiny review, since the Court has refused to extend the obscenity exception to violence.[199] Also because the *Blagojevich* Court's held that the state of Illinois misapplied the *Ginsberg* and *Miller* tests,[200] there is no content that is sexually explicit for minors so to speak of in the video game censorship debate. If the focus was on regulating games like *Rapelay*, such a narrowly tailored law might conceivably be constitutional. But given what content is out there—particularly the games available in this country at the retail level—the only real issue is the constitutionality of regulating and labeling violent games. The holdings of *Miller*, *Schwarzenegger*, and *Blagojevich* are controlling, and they point to the conclusion that violent content is not tantamount to sexual content, and labels that contain subjective messages, such as the label proposed in the Video Game Health Labeling Act, are impermissible content regulations under the First Amendment.

CONCLUSION

With speech in various media being so thoroughly litigated (films, radio, television, telephone, and print media) and with the relatively small amount of video game litigation that favors non-regulation, it is important to ask why there is still so much video game legislation still on the table. As of the writing of this article, there were still eleven laws at the state and federal level that either had passed and have not yet been challenged or are still alive in the legislative process.[201]

To reiterate, the Video Game Health Labeling Act introduced in the House would require video games rated Teen or higher by the ESRB to sport stickers reading, "WARNING: Excessive exposure to violent video games and other violent media has been linked to aggressive behavior."[202] Such a requirement isn't rational in light of studies like that in *Grand Theft Childhood* and the film and game studies by Bushman and Anderson. It would be far more accurate to make the assertion "Exposure to violent video games has been linked to increased social skills and less bullying" or that "Playing violent games has shown no decrease in the

---

199. *See id.* at 959 (citing Roth v. United States, 354 U.S. 476 (1957) and Memoirs v. Massachusetts, 383 U.S. 413 (1966)).

200. Entm't Software Ass'n v. Blagojevich, 404 F. Supp. 2d 1051, 1079–80 (discussing nudity in *God of War* and the application of the *Ginsberg* and *Miller* tests).

201. GamePolitics.com, Legislation Tracker, http://www.gamepolitics.com/legislation.htm (last visited Nov. 28, 2009).

202. Video Game Health Labeling Act of 2009, H.R. 231, 111th Cong. § 1(b) (2009), *available at* http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h231ih.txt.pdf.

occurrence of helping behavior." The warning label suggested by Representative Baca is not any *more* accurate—and may in fact be *much less* accurate in terms of the statistics it presents—than any number of positive or neutral factors that may be shown about violent games. Under the holdings in *Schwarzenegger* and *Blagojevich*, the bill's subjective descriptions are impermissible content regulations and ultimately could not pass the Supreme Court's strict scrutiny review.

In the state of Washington, two bills have recently addressed the issue of controversial video game content. House Bill 2178, introduced in 2005, would allow a person to "maintain an action for personal injury or wrongful death against a manufacturer or retailer of violent video or computer games" if the game was sold to someone under the age of seventeen.[203] Under the case law that appeared in the wake of Jack Thompson's suits, such a law would have great trouble establishing causality.

Also introduced in 2005, House Bill 1366 was signed into law by Governor Christine Gregoire.[204] The law requires retailers to post information about "the existence of a nationally recognized video game rating system" (i.e. the ESRB).[205] The law also states that "a video game retailer shall make available to consumers, upon request, information that explains the video game rating system."[206] Although this law could pass constitutional muster in terms of being a "purely factual and uncontroversial information" requirement, it seems highly superfluous. In an age of unprecedented access to information, why is the state of Washington willing to place the burden on retailers to invest in printed literature on video game ratings that can—*and most definitely should*—be looked up by parents when considering purchasing video games for their children?[207] Even if retailers and parents did see the need for such a service, that is something that would easily distinguish one retailer from another in the marketplace of video game purchases, which is one more example of what makes the process of legislating the issue highly unnecessary.[208]

---

203. H.B. 2178, 2005 Leg., Reg. Sess. (Wa. 2005), *available at* http://apps.leg.wa.gov/documents/billdocs/2005-06/Pdf/Bills/House%20Bills/2178.pdf.

204. Substitute H.B. 1366, 2005 Leg., Reg. Sess. (Wa. 2005), *available at* http://www.leg.wa.gov/pub/billinfo/2005-06/Pdf/Bills/Session%20Law%202005/1366-S.SL.pdf.

205. WASH. REV. CODE § 19.188.040(2) (2008).

206. WASH. REV. CODE § 19.188.040(4) (2008).

207. The ESRB's homepage contains a search engine that allows users to search for game ratings by game title, keyword, or publisher. Entertainment Software Ratings Board, Index, http://www.esrb.org/index-js.jsp (last visited Nov. 28, 2009).

208. As a relevant anecdote, I am acquainted with an owner of a video game store in Boulder, Colorado who says he does not sell M-rated games to children because it lets parents know the store is a safe place to let their children purchase games while the parents shop

During the 2008 presidential primaries, Mitt Romney created an ad about the deteriorating *water quality* (as it were) in America's cultural "ocean."[209] In it, Romney said, "I'd like to see less violence and sex on TV, and in video games, and in movies. And if we get serious about this, we can actually do a great deal to clean up the water in which our kids and our grandkids are swimming."[210] It would be horribly naïve of someone to think that this, in the context of a presidential campaign, could mean anything but a threat to regulate content and access to content at the federal level.

The common thread of these regulations (threatened, proposed, and enacted alike) is that they don't seem to be linked to any significantly real effects of violent gaming or problems that can't be handled through self-regulation; rather, they represent an arbitrary moral condemnation of the content. Society must be wary of such of willfully arbitrary conduct and disingenuous fact-finding, ominously described by Benjamin Franklin in his autobiography: "So convenient a thing it is to be a reasonable creature, since it enables one to find or make a reason for everything one has a mind to do."[211]

At a fundraiser for the 2000 presidential election, Lieberman assured a gathering of entertainment industry supporters in Beverly Hills that "we will never put the government in the position of telling you by law, through law, what to make."[212] This statement from Lieberman about his intent is patently false. During Lieberman's 1993 hearings, the Senator said pointblank to Sega's vice president that *Night Trap* was "gratuitous and offensive and ought not to be available to people in our society."[213] Not "children," mind you, but "people" was the word he chose to use in his comment. This is a correct interpretation of Lieberman's word use considering that later in the hearings he asked the industry, "Why do you need to go across that line and produce this stuff for adults or kids?"[214]

For legislatures to continue to exert such pressure and for politicians to promise to redouble efforts in the future when Circuit Courts have repeatedly struck down identical video game censorship laws is nothing

---

elsewhere, consequently increasing consumers' trust and the owner's sales.

209. Video: Mitt Romney, Ocean Ad, *available at* http://www.youtube.com/watch?v=mnyNID-7AtU&feature=related.

210. *Id.*

211. BENJAMIN FRANKLIN, THE AUTOBIOGRAPHY OF BENJAMIN FRANKLIN 27 (Stanley Applebaum & Philip Smith eds., Dover Publications 1996) (1791).

212. David Lightman, *Film, Music Industries Take Heat From Lieberman*, HARTFORD COURANT, Jan. 26, 2001, at A4.

213. KENT, *supra* note 54, at 475.

214. Video: Icons, ESRB, (G4 television broadcast, episode 303), *available at* http://www.youtube.com/watch?v=5fp0hl9gcxQ.

short of legislative lawlessness.[215] Such behavior shows a wanton disrespect for First Amendment jurisprudence and a willingness to engage in demagoguery for empty political expediency. As a political matter, such behavior should be shunned, and as a legal matter, this should lead to swifter dispositions by courts when reviewing laws that treat video games differently than films.

But even if opponents of such regulations remained inert and failed to properly shun such conduct by politicians and legislatures, we will still see the video game censorship "fad" come to pass. Because video games are so closely analogous to films (in terms of content, historical development, self-censorship, and national notoriety) the game industry is destined to become equally ubiquitous in American culture. The average age of gamers in America is rising too—it was 35 as of 2009.[216] Gamers that played as children are growing up, which decreases the likelihood that they will be shocked or offended as new controversies arise.

If the movies are our guide, this increase in the consumption and in the average age of consumers should lead to a greater societal tolerance for games with violent content. But even if the video game industry has to continue to endure legal battles, it will end up as free of regulation as the film industry is if it just weathers the political storm until society has become desensitized.

For the time being, though, the message from the courts seems to be clear: Game on.

---

215. *See supra* Sections I, V, VII, VIII.

216. ENTERTAINMENT SOFTWARE ASSOCIATION, 2009 ESSENTIAL FACTS ABOUT THE COMPUTER VIDEO GAME INDUSTRY 2 (2009), *available at* http://www.theesa.com/facts/pdfs/ESA_EF_2009.pdf.

SUBSTITUTION EFFECTS: A PROBLEMATIC JUSTIFICATION FOR THE THIRD-PARTY DOCTRINE OF THE FOURTH AMENDMENT

BLAKE ELLIS REID*

INTRODUCTION

In the past half-century, the Supreme Court has crafted a vein of jurisprudence virtually eliminating Fourth Amendment protection in information turned over to third parties—regardless of any subjective expectation of privacy or confidentiality in the information on the part of

the revealer.[1] This so-called "third-party" doctrine of the Fourth Amendment has become increasingly controversial in light of the growing societal reliance on the Internet in the United States, where nearly every transaction requires a user to turn information over to at least one third party: the Internet service provider ("ISP").

Citing the scholarship that has criticized the third-party doctrine would make for "the world's longest law review footnote."[2] This essay instead focuses instead on a *justification* for the doctrine advanced by prominent computer crime scholar Orin Kerr. In his controversial[3] essay *The Case for the Third-Party Doctrine,* Professor Kerr argues that the third-party doctrine is essential to preclude criminals from substituting private transactions involving third parties (particularly ISPs) for the criminals' formerly public transactions, which were subject to police surveillance.[4] This essay examines various descriptive and normative gaps that potentially undermine the "substitution effects" justification.

I.   THE THIRD-PARTY DOCTRINE AND SUBSTITUTION EFFECTS

The Supreme Court succinctly articulated the third-party doctrine in *United States v. Miller*:

> This Court has held repeatedly that the Fourth Amendment does not prohibit the obtaining of information revealed to a third party and conveyed by him to Government authorities, even if the information is revealed on the assumption that it will be used only for a limited purpose and the confidence placed in the third party will not be betrayed.[5]

Normally, a search that yields information of a suspect by law enforcement officials is subject to an inquiry about whether the individual possessed a reasonable expectation of privacy in the information.[6] Under the third-party doctrine, however, an individual usually has no reasonable expectation of privacy in information she turns over to a third party.[7]

---

1. *See, e.g.,* United States v. Miller, 425 U.S. 435, 443 (1976) (internal citations omitted).

2. Orin S. Kerr, *The Case for the Third-Party Doctrine*, 107 MICH. L. REV. 561, 563 n.5 (2009).

3. *See generally* Richard A. Epstein, *Privacy and the Third Hand: Lessons from the Common Law of Reasonable Expectations*, 24 BERKELEY TECH. L.J. 1199 (2009); Erin Murphy, *The Case Against the Case for Third-Party Doctrine: A Response to Epstein and Kerr*, 24 BERKELEY TECH. L.J. 1239 (2009) (responding to Professor Kerr's justification).

4. Kerr, *supra* note 2, at 573–81.

5. *See Miller*, 425 U.S. at 443.

6. *See, e.g.,* Katz v. United States, 389 U.S. 347, 361 (1967) (Harlan, J., concurring).

7. *See, e.g.*, Smith v. Maryland, 442 U.S. 735, 743–44 (1979). However, the Court has

Professor Kerr's primary argument in support of the doctrine is functional: opportunistic criminals in the absence of the third-party doctrine would simply substitute public aspects of their crimes (e.g., stalking a victim in person) with private transactions (calling the victim on the phone).[8] By neutralizing these "substitution effects," the third-party doctrine arguably ensures the technological neutrality of the Fourth Amendment by deterring criminals from making opportunistic substitutions.[9] Professor Kerr worries that, without the third-party doctrine, opportunistic criminals could weave a web of Fourth Amendment protection and "effectively hide their criminal enterprises from observation."[10]

Under this argument, the Fourth Amendment strikes a balance between privacy and security, drawing a line beyond which law enforcement officers no longer need seek a warrant before performing an investigation.[11] Normally, the line is drawn with little difficulty on the basis of location; for example, officers need a warrant to search a person's home, but not a public field.[12]

However, the line-drawing exercise arguably becomes problematic when officers need a warrant to obtain information placed in the hands of third parties.[13] With the increasing potency of technology, a criminal could plan and execute a crime entirely from her home, knowing that the police could not send in undercover agents, record phone calls, or watch Internet activity without a warrant, thus creating "a bubble of Fourth Amendment protection."[14] With every element of the crime shielded by a reasonable expectation of privacy, law enforcement officers would be stuck in an untenable situation, needing probable cause to observe evidence of the crime but needing to observe the crime to have probable cause.[15] Accordingly, access to evidence from third parties would largely be eliminated from police investigations.[16]

Under the substitution effects justification, the third-party doctrine rights the balance, forcing elements of crimes that technology has made private—such as phone calls and Internet usage—back into the public

---

been inconsistent in applying the doctrine in recent years. *See, e.g.*, United States v. Kyllo, 533 U.S. 27, 40 (2001) (holding that heat emanations from a home, effectively turned over to any third party that walks by the home, are nonetheless searched by police using a thermal scanner because the scanner reveals "details of the home").

    8. Kerr, *supra* note 2, at 573, 576.
    9. *Id.* at 573.
    10. *Id.*
    11. *Id.* at 574.
    12. *Id.*
    13. *Id.* at 575–76.
    14. *Id.* at 576.
    15. *Id.*
    16. *Id.*

sphere for the purposes of Fourth Amendment protection, cementing the aforementioned technological neutrality.[17]

Professor Erin Murphy, a vocal critic of *The Case for the Third Party Doctrine*, admits that Professor Kerr's insight regarding technological neutrality and substitution effects is "quite compelling."[18] And Professor Kerr's jurisprudential clout with the courts in the area of criminal procedure and technology is well established.[19] As such, it seems likely that Professor Kerr's novel justification for the third-party doctrine will garner serious consideration both in academia and the judiciary. Accordingly, a closer examination of the descriptive and normative underpinnings of Professor Kerr's argument seems warranted.

II.   DESCRIPTIVE PROBLEMS WITH SUBSTITUTION EFFECTS

The substitution effects justification is descriptively problematic in both jurisprudential and political senses. First, the Supreme Court has never embraced the justification, rendering its adoption a radical departure from existing jurisprudence. Second, it is unclear that the third-party doctrine's preclusion of substitution effects in fact maintains any semblance of technological neutrality in the Fourth Amendment.

A.   *Criminal Motivation: The Supreme Court and Substitution Effects*

The motivations behind criminal behavior are not easily distilled.[20] A particular criminal action may be motivated by a need for privacy, a need for public exhibition, some combination of both, or something else entirely. Thus, whether criminals on average opportunistically substitute private acts for public is a complex empirical question. Professor Kerr, however, asserts simply that "any smart criminal will exercise the option" to substitute private acts for public.[21] This rhetorical sweep belies the possibility that, from a policymaking standpoint, the average criminal might *not* engage in opportunistic substitutions,[22] the third-party

---

17. *See id.* at 577.

18. Murphy, *supra* note 3, at 1241.

19. Professor Kerr's works on criminal procedure and technology have recently been cited by several federal courts. *E.g.*, U.S. v. Johnson, 584 F.3d 995, 1000 n.4 (10th Cir. 2009) (citing Orin S. Kerr, *Four Models of Fourth Amendment Protection*, 60 STAN. L. REV. 503 (2007)).

20. *See* CURT R. BARTOL & ANNE M. BARTOL, PSYCHOLOGY AND LAW: THEORY, RESEARCH, AND APPLICATION 409–11, 424–27 (3d ed. 2004) (describing the complex nature of psychological criminology and the psychosocial factors of criminal behavior).

21. Kerr, *supra* note 2, at 580.

22. One reason for this possibility is that the average criminal might not be very smart. As one commentator points out, "The law is designed . . . to catch drug dealers who go ninety miles per hour while carrying a kilogram of cocaine in their trunks—not those who maintain good operational security and only break one law at a time." E-mail from Christopher

doctrine notwithstanding.[23] Called on this point by Professor Murphy,[24] Professor Kerr responds that a criminal's subjective motivations are irrelevant since third-party transactions shielded by the Fourth Amendment are always problematic.[25]

The debate over subjective intent notwithstanding, Professor Kerr argues that substitution effects explain the jurisprudential foundations for the third-party doctrine—in particular, the Supreme Court's opinions in *United States v. Miller* and *Smith v. Maryland*.[26] As discussed below, however, the criminals in those cases arguably did not opportunistically substitute private acts for public. Accordingly, the Court could not have considered the substitution effects justification, much less embraced it, in those seminal third-party doctrine cases. As such, explicit adoption of the justification by courts in the future would constitute a radical change in third-party doctrine jurisprudence rather than a consistent application of past precedent.

1.   *United States v. Miller*

In *Miller*, a bootlegger purchased equipment for an illicit alcohol production operation using his checking account.[27] Alcohol, Tobacco, and Firearms Bureau (ATF) agents, who had no warrant, obtained from the bootlegger's bank the checks used to purchase the equipment.[28] Copies of the checks were introduced at trial,[29] and the bootlegger was convicted.[30] Affirming the third-party doctrine, the Supreme Court held that the bootlegger, by using checks, had effectively turned over information about his purchases to a third-party (the bank) and, accordingly, had no legitimate expectation of privacy in the checks.[31]

Imagining a hypothetical "world without banks," Professor Kerr argues that the availability of the checking account created a substitution effect, allowing the bootlegger to substitute a private act (paying with a check) for a public act (paying with cash).[32] Without banks, or so the

---

Soghoian, Ph.D. Candidate, Indiana University, to Blake Reid (Jan. 8, 2010, 15:57 MST) (on file with author).

23. The substitution effects justification also presumes that criminals know about and understand the third-party doctrine—a presumption for which no evidence is presented.

24. Murphy, *supra* note 3, at 1241–45.

25. Orin S. Kerr, *Defending the Third-Party Doctrine: A Response to Epstein and Murphy*, 24 BERKELEY TECH. L.J. 1229, 1233–34 (2009).

26. *Id.* at 577-79.

27. United States v. Miller, 425 U.S. 435, 436–37 (1976).

28. *Id.* at 437.

29. *Id.* at 438.

30. *Id.* at 436.

31. *See id.* at 442–43 ("The depositor takes the risk, in revealing his affairs to another, that the information will be conveyed by that person to the Government.") (citations omitted).

32. Kerr, *supra* note 2, at 579.

argument goes, the bootlegger and the equipment seller would have had to travel back and forth to their cash "stashes," thus exposing their activities to the public.[33] The check, on the other hand, allowed the two parties to complete the transaction without the need to visit their respective stashes, rendering the entire transaction private.[34]

Further analysis, however, reveals that the use of the check provided no *ex ante* privacy from the police to either the bootlegger or the seller. Furthermore, the use of the check provided *less ex post* privacy to both parties than if the bootlegger had used cash.

From an *ex ante* perspective, the bootlegger needed to travel to retrieve his checkbook, and the seller needed to travel to the bank to deposit his check. Even if the bootlegger had traveled to retrieve cash from his stash, and the seller had traveled to his stash to deposit the cash, *ex ante* observation of the travels would have given the ATF agents no useful information about the transaction itself, nor even any reason to suspect that something was amiss.

Furthermore, the true privacy interest in *Miller* was not in travelling with money, but rather in the transaction itself—the exchange of money for the illegal bootlegging equipment. The use of a check gave the ATF agents the ability *ex post* to discover that the bootlegger had paid the seller for the still. If the buyer had used cash, the ATF agents merely would have been able to discover that the bootlegger had withdrawn cash from his bank account and that the seller had deposited cash in his—or, in the world without banks, nothing at all.

It is unclear why the bootlegger chose to pay with a check. Perhaps he was concerned about being robbed while carrying around a substantial sum of money. Regardless, the less private nature of using a check (from an *ex post* perspective) suggests that the bootlegger's payment choice was probably not motivated by privacy.

2.   *Smith v. Maryland*

Of course, some criminals may in fact augment public acts with complementary private acts; *Smith v. Maryland* provides nominal support for that assertion.[35] But *Smith* merely illustrates an *augmentation* of public behavior with a different and complementary private behavior, rather than an opportunistic *substitution*.

In *Smith*, a robber began to stalk his victim following the robbery, making threatening phone calls to her home.[36] The telephone company, at the request of Baltimore police (who, again, had no warrant), installed

---

33. *Id.*

34. *Id.*

35. Smith v. Maryland, 442 U.S. 735, 737 (1979).

36. *Id.*

a pen register device, which tracked the numbers dialed by the robber, and subsequently caught him calling the victim again.[37] On the basis of this evidence, the police were able to obtain a warrant to search the robber's home and he was eventually convicted of robbery.[38] The Supreme Court again affirmed the third-party doctrine, holding that the robber held no legitimate expectation of privacy in the phone numbers he dialed since he had turned them over to a third party (the phone company).[39]

Professor Kerr argues that the robber intentionally substituted a private act (stalking the woman over the phone) for a public act (stalking her in person).[40] However, the robber stalked the woman in person after the robbery[41] *in addition to* stalking her over the phone. There is nothing to suggest that he undertook the phone stalking *in lieu* of in-person stalking; the fact that he undertook both methods of stalking suggests not that they were substitutes for one another, but rather complementary activities. Thus, the idea that the robber was motivated by privacy when he harassed his victim over the phone is speculative.

3.   The Supreme Court Has Not Adopted the Substitution Effects Justification

That *Miller* and *Smith* arguably do not involve opportunistic substitution effects does not necessarily doom future use of the justification.[42] However, as the foregoing discussion illustrates, the Supreme Court has never considered the justification, much less embraced it. Accordingly, the adoption or invocation of the justification by judges and lawyers should not be viewed as in comport with existing jurisprudence, but rather as a radical shift demanding a normative consideration of underlying policy concerns.[43]

B.   *Technological Neutrality and Surveillance Myths*

Accepting the proposition that substitution effects indeed exist,[44] it is nonetheless also questionable whether precluding such effects maintains any meaningful sense of technological neutrality in the Fourth

---

37. *Id.*
38. *Id.* at 737–38.
39. *See id.* at 745
40. Kerr, *supra* note 2, at 578.
41. *See Smith*, 442 U.S. at 737.
42. E-mail from Orin Kerr to Blake Reid (January 15, 2009, 20:58 MST) (on file with author).
43. This essay argues that Professor Kerr has not presented a sufficient normative case for using the justification. *See* discussion *infra* Part III.
44. Kerr, *supra* note 25, at 1234.

Amendment.

Under Professor Kerr's neutrality argument, precluding substitution effects prevents savvy criminals from taking advantage of new privacy-enabling technology, thus righting a hypothetical balance of privacy and security whenever a given technology would give criminals an advantage over law enforcement.[45]

The neutrality argument, however, relies on the false premise that law enforcement has an *unlimited* capability to surveil low-tech public activities and a *limited* capability to surveil high-tech private activities. As discussed below—both generally and in the context of *Miller* and *Smith*—the opposite is often true.[46] That is, the use of technology often allows law enforcement, with the power of the third-party doctrine, to surveil more people more extensively at lesser expense.

1.   Low-Tech Langour, High-Tech Hypertrophism

Low-tech surveillance, such as committing officers to stakeouts and tracking work, is expensive—and funding of boots-on-the-ground police presence seems to be on a problematic decline in the United States. Professor William Stuntz points out that "[t]he key problem that faces American policing today is that not enough money is spent on it."[47]

For example, in New Orleans, an area devastated by high crime since Hurricane Katrina, the police department was relegated to operating out of portable trailers and was even forced to take a collection to pay for the cleaning of their portable toilets.[48] Worse yet, worried officers had to turn to local donors to replace water-damaged bulletproof vests and weren't able to get enough to protect the entire force.[49] Thousands of alleged criminals were released because the police were unable to gather sufficient evidence to charge them; only a single fingerprint examiner and only one firearm examiner remained on the force as of June 2007, despite the city having experienced a nation-high 90 murders during the previous six months.[50]

A recent Wisconsin killing spree illustrates the underfunding problem in the particular context of low-tech surveillance.[51] Law

---

45. Kerr, *supra* note 2, at 579–81.

46. For a more generalized articulation of police surveillance capabilities in low-tech and high-tech circumstances, see Paul Ohm, *Probably Probable Cause: The Diminishing Importance of Justification Standards*, 94 MINN. L. REV. 1514 (2010).

47. William J. Stuntz, *Accountable Policing* 5 (Harvard Public Law Working Paper No. 130, 2006), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=886170.

48. *See* Gilbert Cruz, *New Orleans: Police Still Underfunded*, TIME, June 20, 2007, http://www.time.com/time/nation/article/0,8599,1635439,00.html.

49. *Id.*

50. *Id.*

51. *See* Sandy Cullen, *Witzel Manhunt Reveals 'Limited Resources' of Police*, WIS. ST. J.,

enforcement agencies were on the lookout for a fugitive in the hours after he killed a man for allegedly having an affair with the fugitive's ex-girlfriend.[52] The fugitive successfully evaded the police for nearly 2000 miles before predictably returning a week later to his ex-girlfriend's Wisconsin home to kill one of her family members.[53] "It doesn't really surprise me," commented Michael Scott, the director of the Center for Problem-Oriented Policing at the University of Wisconsin at Madison.[54] "It does kind of point out the limited resources police, under the best of circumstances, have," Scott continued.[55] "We sometimes get a false sense of security about what the police can do to protect us."[56] Asked why the police, knowing that the killer might turn up at the ex-girlfriend's house, didn't simply surveil the house 24 hours a day, Scott commented that such surveillance would be a "near impossibility" for police in a rural community and something even police in a major city would likely be unable to do.[57] The sheriffs involved agreed, pointing out that no more than two to four deputies were normally available on a given night to police the *entire county*[58] (which covers over 750 square miles).[59] "We wouldn't do that on any case," one sheriff commented, "[unless] we expected there would be a great likelihood of a crime."[60]

While many police departments seem to be struggling to implement effective low-tech surveillance (even to prevent serious crimes like murder, as in the previous example), the high-tech surveillance of third-party related activities is on the rise. Professor Christopher Slobogin points out that government agencies have been "eager" since the terror attacks of September 11, 2001 to experiment with "data-mining," the process of analyzing information recorded about its citizens through various transactions.[61] In 2003, Congress opened the door for ominous, Orwellian-sounding programs such as TIA (Total Information Awareness), ADVISE (Analysis, Dissemination, Visualization, Insight, and Semantic Enhancement), and TALON (Threat and Local Observation Notice).[62] These programs, recently culminating in the $380

Nov. 14, 2008, http://www.madison.com/wsj/topstories/314347.

52. *Id.*

53. *Id.*

54. *Id.*

55. *Id.*

56. *Id.*

57. *Id.*

58. *Id.*

59. Wisconsin Online, Iowa County, Wisconsin, http://www.wisconline.com/counties/iowa/ (last visited May 10, 2010).

60. Cullen, *supra* note 51.

61. Christopher Slobogin, *Government Data Mining and the Fourth Amendment*, 75 U. CHI. L. REV. 317, 317 (2008).

62. *Id.* at 317–19.

million Information Fusion Center project, bring together data from the public and private sector to centralize information about individuals, including "banking and finance, real estate, education, retail sales, social services, transportation, postal and shipping, and hospitality and lodging transactions."[63] If operational difficulties[64] can be overcome, these programs could provide law enforcement officers with an unprecedented view of the daily lives of American citizens—particularly criminals[65]—and companies like Google and Oracle are poised to fill in the gaps where the government has failed thus far.[66]

2.   *Miller* and *Smith* Revisited

Miller aptly showcases the low-tech/high-tech surveillance dichotomy. Recall the argument that the bootlegger in *Miller* substituted a private act (paying with a check) for a public act (paying with cash).[67] The implicit assertion that the bootlegger's malfeasance would have been easily discovered if the bootlegger had paid with cash[68] is only true if the ATF had infinite surveillance capabilities.

To be precise, the argument goes:

> If you need to pay for something in this world, you would need to get the money to do it: You would need to travel to your stash, pick up the money, and then travel to the place where you are making your purchase. If you are the seller, you need to take the money, take it back to your stash, and store it away for safekeeping. There are public parts of the transaction on both sides.[69]

While there are several public aspects of the transaction, it is unclear why the ATF would have surveiled any of them—unless it was engaged in suspicionless, dragnet surveillance of everyone. The bootlegger, for example, did nothing to arouse ATF suspicions until well after the transaction was complete.[70] Thus, it is unlikely that ATF agents would have uncovered any evidence of the transaction if the bootlegger had paid with cash.

---

63. *Id.* at 318 (citations omitted).

64. *Id.* at 324–25.

65. *Id.* at 323–24.

66. *Id.* at 327; *see also* Christopher Sohoian, *8 Million Reasons for Real Surveillance Oversight*, SLIGHT PARANOIA, Dec. 1, 2009, http://paranoia.dubfire.net/2009/12/8-million-reasons-for-real-surveillance.html (describing the extensive surveillance capabilities provided to law enforcement by telecommunications companies).

67. Kerr, *supra* note 2, at 579.

68. *See id.*

69. *Id.*

70. In *Miller*, the police were actually alerted to the bootlegger's illicit activities by a fire in his warehouse. United States v. Miller, 425 U.S. 435, 437 (1976).

On the other hand, the bootlegger's use of a check allowed the agents to find evidence of his transactions *ex post* without using any prospective surveillance. That the bootlegger used more advanced technology (a check) actually broadened the scope and accuracy of the surveillance techniques available to the agents—without any corresponding increase in cost. Thus, the third-party doctrine in *Miller*, did not maintain technological neutrality, but rather provided the police with better, cheaper surveillance than they would have had prior to the technological advance.

Smith provides another example of the low-tech/high-tech surveillance dichotomy. Recall the argument that the stalker substituted a private act (over-the-phone stalking) for a public act (in-person stalking).[71] The implicit assertion that the police would have an easy time catching the stalker in person[72] is only true if the police had unlimited surveillance resources. They would have had to canvas the neighborhood, staking out the victim's house until the stalker showed up, with little reason to expect that he would do so. It is unlikely that the Baltimore police, who struggled with record-high crime rates in the 1970s,[73] would have dedicated the resources necessary to catch the stalker in person.

However, the substitution of a high-tech activity (the frequent harassing phone calls) gave the police the necessary suspicion to canvas the neighborhood and discover the stalker's identity, allowing them to set up the pen register on his phone.[74] Again, the third-party doctrine provided not technological neutrality, but a substitution of cheap, hands-off surveillance for expensive, in-person surveillance, thereby increasing the evidence that the police were able to obtain.

3.   A Thought Experiment

As illustrated by *Miller* and *Smith*, the simultaneous lack of surveillance capabilities for low-tech public acts and overdevelopment in the high-tech surveillance of private, third-party facilitated acts indicate that the third-party doctrine may often provide law enforcement officials with *more* power to collect evidence about and prevent private crimes than public crimes. This outcome indicates technological bias, rather than neutrality, in the third-party doctrine.

---

71. Kerr, *supra* note 2, at 578.

72. *See id.* at 577–78.

73. For example, the robbery rate in Baltimore began a historic increase in the late 1970s, nearly double that of the neighboring cities of Washington, D.C. and Philadelphia. RALPH B. TAYLOR, BREAKING AWAY FROM BROKEN WINDOWS: BALTIMORE NEIGHBORHOODS AND THE NATIONWIDE FIGHT AGAINST CRIME, GRIME, FEAR, AND DECLINE 35–36 (2001).

74. *See* Smith v. Maryland, 442 U.S. 735, 737 (1979).

To confirm this with a thought experiment, consider crimes committed entirely over the Internet in comparison to their physical-world equivalents—for example, hacking into a bank website and virtually transferring money to another account, versus breaking into and robbing a brick-and-mortar bank.

With the brick-and-mortar robbery, the police will need to obtain a warrant and dedicate significant resources to find evidence of the crime (e.g., the robbers may stash the stolen money and weapons used in the robbery in one of their own houses) and may need to conduct widespread low-tech surveillance to prevent the destruction of evidence (e.g., the robbers may have a sophisticated money laundering operation).

On the other hand, because Internet service providers are now able to keep accurate logs of all users' online activity,[75] the police will be able to obtain evidence of every step taken during the crime simply by calling the ISP and asking for it—with no need for a warrant under the third-party doctrine.[76]

Contrast the two crimes: with the physical robbery, a public crime with no third parties involved, the police are placed at least at a nominal disadvantage in terms of obtaining evidence of the crime; they must obtain a warrant and dedicate significant officer resources toward surveillance to obtain the evidence. With the online robbery, a private crime facilitated with the help of an Internet service provider, a third party, the police need not obtain a warrant or invest any officer resources towards surveillance if the ISP chooses to cooperate.

It follows, then, that the third-party doctrine often fails to maintain technological neutrality, instead giving the police unbounded access to evidence where the Fourth Amendment previously would have posed limits.

III.   INNOCENCE CONSIDERATIONS: A NORMATIVE GAP

The descriptive problems with the substitution effects justification demand further normative investigation. Indeed, the preclusion of substitution effects is a normatively problematic basis for crafting Fourth

---

75. This is no longer a paranoid fantasy for the tin-foil hat set. Professor Paul Ohm argues that pervasive "complete monitoring" of all user traffic by Internet Service Providers (ISPs) is a real possibility. *See generally* Paul Ohm, *The Rise and Fall of Invasive ISP Surveillance*, 2009 U. ILL. L. REV. 1417 (2009). Furthermore, there is a push to require such logging statutorily. *See* Kevin Fayle, *Congress Pushes (Again) For ISP Data Retention*, THE REGISTER, Feb. 12, 2007, http://www.theregister.co.uk/2007/02/12/congress_isp_data_retention_push/.

76. Of course, this hypothetical experiment ignores the real-world impact of the Wiretap, Pen Register, and Stored Communications Acts, since they are congressionally mandated rollbacks to the sweeping nature of the third-party doctrine that probably would have been unnecessary in the doctrine's absence.

Amendment jurisprudence because it disproportionately focuses on criminal activity and efficient law enforcement without adequately considering the privacy rights of innocent citizens. Although the prospect of letting a guilty criminal go free often favors expansive search abilities for the police,[77] both the Supreme Court and scholars have demanded an approach to Fourth Amendment jurisprudence based at least partly on innocence considerations.

Applying this normative framework to the substitution effects justification reveals that the third-party doctrine, even if it works as advertised, may problematically preclude innocent citizens, not just criminals, from opportunistically substituting private acts for public. Furthermore, the third-party doctrine may induce innocent citizens to avoid socially productive uses of technology—perversely causing inverse substitution effects.

A.   Innocence Ideology and the Fourth Amendment

The Fourth Amendment provides that "[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated . . . ."[78]

At least from a textual perspective, the primary purpose of the Fourth Amendment is to protect the privacy of citizens from inappropriate governmental intrusion. The Supreme Court agreed in *Schmerber v. California*: "The overriding function of the Fourth Amendment is to protect personal privacy and dignity against unwarranted intrusion by the State."[79]

The motivation for such an intrusion may simply be the desire for efficiency by law enforcement officials. George Orwell grimly points out, though, that the motivation for seeking the power to intrude on the privacy of citizens indiscriminately may be insidiously self-evident:

> [We seek] power entirely for its own sake. We are not interested in the good of others; we are interested solely in power. . . . We know that no one ever seizes power with the intention of relinquishing it. Power is not a means, it is an end. . . . The object of persecution is persecution. The object of torture is torture. The object of power is power.[80]

---

77. S*ee* Arnold H. Loewy, *The Fourth Amendment as a Device for Protecting the Innocent*, 81 MICH. L. REV. 1229, 1230 (1983) (noting the proclivity of the Supreme Court to incorrectly focus on the guilty, including the particularly egregious example of *United States v. White*, 401 U.S. 745 (1971)).

78. U.S. CONST. amend. IV.

79. 384 U.S. 757, 767 (1966).

80. GEORGE ORWELL, 1984, at 263 (Signet Classic 1950) (1949).

Regardless of the motivation, the Court further acknowledges that "[t]he security of one's privacy against arbitrary intrusion by the police" is "at the core of the Fourth Amendment" and "basic to a free society."[81]

Professor Arnold Loewy argues that the Fourth Amendment serves to shield the privacy rights of *innocent* civilians, and that the guilty are merely "incidental beneficiaries" of the amendment's protections.[82] Indeed, the amendment puts a textual thumb on the scale, favoring the privacy of innocent citizens over the desire to catch and punish criminals.

To illustrate this point, imagine that a robbery is committed in a small, isolated town with one thousand homes. The police are certain that the culprit lives in town, but have no idea who he or she is. Accordingly, the police search every home in town for the stolen goods, and eventually find them, thus identifying the robber.

From the perspective of catching and punishing criminals, the situation is a success on two levels. An *ex ante* evaluation would predict that the searches collectively have a one-hundred percent likelihood of finding the stolen goods; an *ex post* evaluation would reveal that the searches indeed succeeded in finding the goods and catching the criminal. Yet, the searches almost certainly would violate the Fourth Amendment.[83] As a result, evidence of the stolen goods would be excluded from use in prosecuting the robber,[84] who would likely get off scot-free despite damning evidence of his criminal conduct.

This non-intuitive result is arguably a positive one, however. An *ex ante* evaluation would predict that an individual search has a one-tenth of one percent chance of catching the criminal and a ninety-nine point nine percent chance of violating the privacy of an innocent citizen; an *ex post* evaluation would reveal that, indeed, nine-hundred and ninety-nine of the searches violated the privacy of innocent civilians and failed to catch the criminal.[85] Such a result would be too a heavy price to pay in the eyes

---

81. Wolf v. Colorado, 338 U.S. 25, 27 (1949).

82. Loewy, *supra* note 77, at 1229–1230.

83. The Fourth Amendment would govern the search of each house. *See* Lewis v. U.S., 385 U.S. 206, 211 (1966) ("Without question, the home is accorded the full range of Fourth Amendment protections."). Warrantless searches of homes for objects (the stolen goods, in this case) are generally prohibited absent probable cause. Agnello v. U.S., 269 U.S. 20, 33 (1925) ("Belief, however well founded, that an article sought is concealed in a dwelling house, furnishes no justification for a search of that place without a warrant. And such searches are held unlawful notwithstanding facts unquestionably showing probable cause.") Though probable cause is "not readily, or even usefully, reduced to a neat set of legal rules," *Illinois v. Gates*, 462 U.S. 213, 232 (1983), it is hard to imagine a court considering a one percent likelihood "probable" in any sense of the word.

84. *See* Ker v. California, 374 U.S. 23, 30–31 (1963).

85. Of course, if the police were to stop the search immediately after finding the evidence for which they were searching, they might search fewer than all the homes. Then again, thoroughness concerns might motivate them to extend the search to all of the houses "just in case."

of the Fourth Amendment.

This example underscores Professor Loewy's point: inherent in the Fourth Amendment is a focus on protecting the privacy of innocent citizens. Even when a search tactic is *guaranteed* to be successful in catching a criminal, the Fourth Amendment may preclude it if it is likely to violate the privacy of innocent citizens.[86] Accordingly, focusing solely on the capture of the guilty when evaluating Fourth Amendment doctrine is insufficient; a holistic approach should consider the privacy of innocent citizens as well.

B.   The Substituting Innocent Citizen

The innocence rubric reveals an unanticipated consequence of the third-party doctrine: if it precludes criminals from opportunistically substituting private acts for public, it may do the same to innocent citizens.

Assume *arguendo* that the bootlegger in *Miller* and the stalker in *Smith* engaged in opportunistic substitutions in committing their crimes. It might be tempting, then, to justify the third-party doctrine by solely evaluating the judicial outcomes—in both cases, the criminal was captured and convicted, a desirable result. But consider the innocent citizens whose records were searched in each case. Perhaps the bootlegger wrote alimony checks to an ex-wife, the amounts of which suddenly became known to the police. Perhaps the stalker made calls to his therapist, revealing their relationship. Everyone to whom the bootlegger wrote checks and who wrote checks to the bootlegger had their identities revealed to the police.[87] Everyone to whom the stalker placed a call had her identity similarly revealed.[88] Presumably, all of these people were innocent, or at least not suspected by law enforcement of having committed any crime. Perhaps many of them had chosen to use checks and telephones to substitute *innocent* private acts for previously public acts. The police violated the privacy of each of those individuals.

It is not difficult to imagine that the third-party doctrine could facilitate even more insidious privacy violations. For example, a journalist may be working on a story on police corruption. In retaliation, the police, without violating the Fourth Amendment, could log everyone that the

---

86. That the criminal "incidentally benefits," as Professor Loewy puts it, by having the evidence against her excluded from use in prosecution is not the goal of the Fourth Amendment, but merely a necessary incentive to prod the police into being reasonably sure that their tactics do not violate the privacy of innocent citizens. *See* Elkins v. United States, 364 U.S. 206, 217 (1960) ("The [exclusionary] rule is calculated to prevent, not to repair. Its purpose is to deter—to compel respect for the constitutional guaranty in the only effectively available way—by removing the incentive to disregard it.") (citation omitted).

87. *See* United States v. Miller, 425 U.S. 435, 437–38 (1976).

88. *See* Smith v. Maryland, 442 U.S. 735, 737 (1979).

journalist calls—and reveal the identity of a previously anonymous whistleblower in their department.

It is quantitatively difficult to compare the privacy costs to innocent citizens with the cost to society of letting some criminals go free. Of course, the courts in the foregoing cases both decided (perhaps unconsciously) that the cost to society was higher. And there are ways to protect the privacy of individuals associated in private transactions with criminals. For example, the police in *Smith* could have filtered out all phone calls except to the victim.[89] But as a normative matter, it seems essential to balance the efficiency gains for law enforcement against the privacy costs to innocent citizens prior to invoking the third-party doctrine.

C.   *Self-Flagellation and Reverse Substitution Effects*

It is possible that the aforementioned privacy costs of the third-party doctrine to innocent citizens may cause them to stop making socially productive, privacy-enhancing substitutions. Even more perversely, though, it may, in the long run, cause them to make reverse substitutions—from private acts to public acts—to avoid abuse by the police.

Judge Richard Posner's *reductio ad absurdum* argument considers the hypothetical consumer seeking absolute privacy: a veritable hermit who gives up his driver's license (because of the required disclosure of personal information to the DMV), his job (because of the required verification of references), his credit cards (because of the required submission to an intrusive credit check), his phone (because of possible government surveillance) and so on.[90] The Internet provides a poetic illustration of such a consumer: anonymous Slashdot[91] poster "KlaymanDK," who queried the digital masses about the privacy costs of third-party

---

89. Of course, the police are not necessarily likely to implement filters—and filters may be difficult or impossible to implement in some situations. In *Payner v. United States*, an IRS special agent on the hunt for a narcotics trafficker arranged an illegal scheme to search the banker's briefcase without the banker's knowledge, photographing over 400 pages of documents. 447 U.S. 727, 730 (1980). Though the documents lead to the conviction of the scofflaw, it's unclear that the IRS was actually looking for him in the first place. Thus, the IRS likely could not have filtered the evidence to protect details of the bank transactions of innocent citizens. The Colorado Supreme Court recently used this rationale to reject the third-party doctrine in context of a police search of over 5,000 tax returns seized from a tax preparer, pointing out that the search was an impermissible "fishing expedition" into the files of clients, "the substantial majority of which were free from any evidence of wrongdoing." *See* People v. Guiterrez, 222 P.3d 925, 944 (Colo. 2009) (en banc) ("[T]he limitations imposed by the warrant on the scope of the search were ineffective, as the officers seized *all* tax returns in [the preparer's] custody, including those not authorized by the warrant.").

90. Richard A. Posner, *Privacy, Surveillance, and Law*, 75 U. CHI. L. REV. 245, 247–48 (2008).

91. A website devoted to "News for Nerds, Stuff that Matters," http://www.slashdot.org.

transactions:

> Over the last decade or so, **I have strived to maintain my privacy**. I have uninstalled Windows, told my friends 'sorry' when they wanted me to join Facebook, had a fight with my brother when he wanted to move the family email hosting to Gmail, and generally held back on my personal information online. But since, amongst all of my friends, I am the only one doing this, it may well be that my battle is lost already. Worse, I'm really putting myself out of the loop, and it is starting to look like **self-flagellation**. Indeed, it is a common occurrence that my wife or friends will strike up a conversation based on something from their Facebook 'wall' (whatever that is). Becoming ever more unconnected with my friends, live or online, is ultimately harming my social relations. I am seriously considering throwing in the towel and signing up for Gmail, Facebook, the lot. If "they" have my soul already, I might as well reap the benefits of this newfangled, privacy-less, AJAX-2.0 world. It doesn't really matter if it was me or my friends selling me out. Or does it?[92]

KlaymanDK is an example of a presumably innocent citizen worried about turning personal data over to third parties—particularly corporations. He seems concerned about privacy in general; of course, there are many ways for corporations to violate privacy that don't implicate the Fourth Amendment, such as losing data to identity thieves. However, several responses to KlaymanDK's question indicate that Fourth Amendment concerns lurk just beneath the surface for similarly privacy-conscious innocent citizens:

> How do you know your lawful activities will always be lawful? Every time I see someone react with 'I'm not a criminal' fallacy, all I can think of is the question "Are you now, or have you ever been associated with a member of the Muslim faith?" We're not far away from a witch hunt of that flavor.[93]

Applied for a job, while sharing a name with a convicted criminal

---

92. Posting of kdawson to Slashdot, *Give Up the Fight For Personal Privacy?*, http://yro.slashdot.org/article.pl?sid=08/10/07/2112249 (Oct. 7, 2008, 17:29) (emphasis added). Facebook is a "social-networking" website available at http://www.facebook.com; for a useful primer on the privacy concerns surrounding Facebook, consult Catherine Rampell, *What Facebook Knows That You Don't*, WASH. POST, Feb. 23, 2008, at A15. Gmail is an Internet-based free e-mail service operated by Google available at http://www.gmail.com. For further information on Gmail privacy concerns, consult the website Gmail Is Too Creepy, http://www.gmail-is-too-creepy.com/. Finally, AJAX, or Asynchronous JavaScript and XML, is a term for the collective programming techniques that underlie many modern websites like Gmail and Facebook. For a lay-accessible explanation, see *What is Ajax?*, RIASPOT.COM, July 7, 2008, http://www.riaspot.com/articles/entry/What-is-Ajax-.

93. Posting of Hyppy to Slashdot, Give Up the Fight For Personal Privacy?, http://yro.slashdot.org/article.pl?sid=08/10/07/2112249 (Oct. 7, 2008, 18:37).

who lives near you? Been pulled over by the police or sent fines for speeding, because someone cloned your car's plates?[94]

[Something may] happen in the future to make currently acceptable, moral, lawful behavior illegal.[95]

I manage to stay out of friend's pictures for this reason. . . . [k]eep in mind that [law enforcement] agencies do look at it during criminal investigations, and use it as evidence. Just some things to keep in mind . . .[96]

Perhaps Professor Loewy was prophetic when he predicted that the police could use evidence wrongfully obtained about innocent citizens "for parlor games, practical jokes, or harassment."[97] These Slashdot users are not just worried about the inability to use Facebook or Gmail—they are worried about police harassment, religious persecution, and false prosecution. And if their self-flagellating avoidance of beneficial technology becomes pervasive, the social costs may be immense.[98]

Even though the third-party doctrine may not be solely to blame for these users' concerns about online privacy, the chilling effect of the doctrine on legitimate, socially productive activities such as the usage of data-collecting Internet web sites by innocent, privacy seeking consumers must also be considered when invoking the preclusion of substitution effects as a justification for the third-party doctrine.

CONCLUSION

Articulating a viable justification for the third-party doctrine is tempting to scholars, particularly given the mountain of critical scholarship indicating that no such justification exists; to justify the doctrine successfully is to triumph over the conventional wisdom. Professor Kerr's argument for the substitution effects justification is compelling in many ways, but its adoption must be tempered by consideration of its descriptive and normative problems.

---

94. Posting of Anonymous Brave Guy to Slashdot, Give Up the Fight For Personal Privacy?, http://yro.slashdot.org/article.pl?sid=08/10/07/2112249 (Oct. 7, 2008, 19:01).

95. Posting of maillemaker to Slashdot, Give Up the Fight For Personal Privacy?, http://yro.slashdot.org/article.pl?sid=08/10/07/2112249 (Oct. 7, 2008, 17:54).

96. Posting of NJRoadfan to Slashdot, Give Up the Fight For Personal Privacy?, http://yro.slashdot.org/article.pl?sid=08/10/07/2112249 (Oct. 7, 2008, 18:36).

97. Loewy, *supra* note 77, at 1253.

98. Even citizens looking for an intermediate approach between shunning technology and giving up their privacy are faced with a dizzying array of technical considerations. *See, e.g.*, Electronic Frontier Foundation, What Can I Do To Protect Myself?, https://ssd.eff.org/3rdparties/protect (last visited May 10, 2010).