EVERYTHING YOU WANT: THE PARADOX OF CUSTOMIZED INTELLECTUAL PROPERTY REGIMES

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ABSTRACT

Special interest groups share a dream: enacting legislation customized for, and hopefully drafted by, their industry. Customized rules created via legislative capture, though, are the worst-case scenario from a public choice perspective: they enable narrow interests to capture rents without generating sufficient societal benefits. American intellectual property (IP) law offers useful case studies in legislative capture: special interests have created their own rules three times in the past forty years with the Semiconductor Chip Protection Act, the Audio Home Recording Act, and the Vessel Hull Design Protection Act. Paradoxically, though, these customized IP systems have consistently disappointed their drafters: all three of these systems lie in desuetude. This result challenges the conventional wisdom about regulatory capture by special interests, suggesting there is less to fear from legislative capture than most legal scholars believe in intellectual property and beyond. The puzzle is why, when given free rein to design the rules that govern them, interest groups have done such a poor job in seizing that advantage.

This Article brings together two scholarly debates. The first is within intellectual property: should IP doctrines be tailored by industry, or comprise rules of general application? The second is within public choice: how risky is regulatory capture by special interests?

The Article identifies two key reasons for the ineffectiveness of customized regimes. First, industry groups are fragile, fractal-like coalitions of disparate interests; the fault lines between creators and copyists are often points of fracture. Second, interest groups embed current business models and technologies into these systems, making regulation vulnerable to disruptive innovation. It explores how these findings affect proposals for customized regimes for artificial intelligence, weather data, traditional knowledge, privacy, and fashion, and concludes that customized regimes are less effective and threatening than previously thought.

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> I caution you not to interpret H.R. 1007 as a government hand-out to the semiconductor industry. Rather, H.R. 1007 is a simple, long overdue, step toward ensuring fair competition in the development and marketing of semiconductor chips.
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> —Representative Norman Y. Mineta, 1979.[1]

> When you hear somebody say, "This is not about money," it's about money.
>
> —Senator Dale Bumpers, 1999.[2]

1. *Copyright Protection for Imprinted Design Patterns on Semiconductor Chips: Hearing on H.R. 1007 Before the Subcomm. on Cts., C.L. & the Admin. of Just. of the H. Comm. on the Judiciary*, 96th Cong. 17 (1979) [hereinafter *1979 SCPA Hearing*].

2. *Transcript: Former Sen. Dale Bumpers*, CNN (Jan. 21, 1999), https://www.cnn.com/ALLPOLITICS/stories/1999/01/21/transcripts/bumpers.html. Bumpers attributed the quote to H.L. Mencken, but it was first used by political cartoonist Frank McKinney Hubbard in 1916. *See Franklin Ening News*, at 4, AIM MEDIA (Nov. 24, 1916), https://aim.newspapers.com/browse/the-franklin-evening-star_3475/1916/11/04; *When They Say It's Not About Money, It's About Money*, QUOTE RSCH. (Aug. 29, 2020), https://quoteinvestigator.com/2020/08/29/about-money/#f+438293+1+1.

I. INTRODUCTION

Be careful what you ask for.[3]

Regulated interest groups of every variety—corporations,[4] charities and non-profits,[5] colleges[6]—have one thing in common: they would like to write their own rules, usually to reduce competition. Intellectual property (IP), though sometimes an effective means to this end, is overall poorly suited to it.[7] Systems such as copyright and patent law are relatively blunt instruments—political necessity dictates that they must embody compromises among industries and interest groups,[8] with provisions that are rarely optimized for

3. The first part of the Article's title is borrowed from the 1999 hit song by pop group Vertical Horizon. Its lyrics strike a chord with the Article's thesis: "I am everything you want / I am everything you need / I am everything inside of you / That you wish you could be / I say all the right things / At exactly the right time / But I mean nothing to you and I don't know why."

4. *See* David Streitfeld, *Tech Giants Settle Antitrust Hiring Suit,* N.Y. TIMES (Apr. 24, 2014), https://www.nytimes.com/2014/04/25/technology/settlement-silicon-valley-antitrust-case.html (describing settlements by seven major technology firms in litigation over "no poaching" agreement for engineers); Findings of Fact, United States v. Microsoft Corp., Nos. 98-1232 & 98-1233 (D.D.C. Nov. 5, 1999), https://www.justice.gov/sites/default/files/atr/legacy/2006/04/11/msjudge.pdf.

5. *See* Kars 4 Kids Inc. v. Am. Can!, 2022 U.S.P.Q. 2d (BNA) 548 (D.N.J. June 10, 2022), on remand from 8 F.4th 209, 216 (3rd Cir. 2021) (deciding trademark suit between similarly-named charities); Nat'l Soc'y of Prof'l Engineers v. United States, 435 U.S. 679 (1978) (imposing antitrust liability on non-profit professional organization that prohibited price competition among members); *see generally* Tomas J. Philipson & Richard A. Posner, *Antitrust In the Non-Profit Sector*, Nat'l Bureau of Econ. Rsch., Working Paper No. 12132 (Mar. 2006), https://www.nber.org/system/files/working_papers/w12132/w12132.pdf (contending non-profit firms have incentives similar to for-profit firms to limit competition).

6. *See* Melissa Korn, *Yale, Georgetown, Other Top Schools Illegally Collude to Limit Student Financial Aid, Lawsuit Alleges*, WALL ST. J. (Jan. 10, 2022), https://www.wsj.com/articles/yale-georgetown-other-top-schools-illegally-collude-to-limit-student-financial-aid-lawsuit-alleges-11641829659; Nat'l Collegiate Athl. Ass'n v. Alston, 594 U.S. __ (2021) (finding NCAA's limits on compensation to student athletes violated antitrust laws); *Consent Decree Settles Charge of Conspiracy to Restrain Price Competition On Financial Aid Against Major Universities*, U.S. DEP'T OF JUSTICE (May 22, 1991), https://www.justice.gov/archive/atr/public/press_releases/1991/325032.pdf.

7. *See* Ariel Katz, *Making Sense of Nonsense: Intellectual Property, Antitrust, and Market Power*, 49 ARIZ. L. REV. 837, 853–60 (2007); Christina Bohannan & Herbert Hovenkamp, *IP and Antitrust: Reformation and Harm*, 51 B.C. L. REV. 905, 923–26 (2010); Mark A. Lemley & Mark P. McKenna, *Owning Mark(et)s*, 109 MICH. L. REV. 137, 187–89 (2010).

8. One illustrative example is the safe harbor provisions of the Digital Millennium Copyright Act (DMCA), codified at 17 U.S.C. § 512. These rules generally immunize internet intermediaries from being sued for carrying copyright-infringing content if they respond to notices of claimed infringement from content owners. *See* Matthew Sag, *Internet Safe Harbors and the Transformation of Copyright Law*, 93 NOTRE DAME L. REV. 499, 502–05 (2017).

any of them.[9] Innovators must thus tolerate legal rules that are imperfect fits for their particularized needs.

And yet, tantalizingly, special interests have occasionally succeeded in obtaining customized treatment in the form of regulation designed for—if not by—their members, without countervailing provisions that benefit other industries or actors.[10] This Article analyzes the three existing case studies of major specialized IP rule sets from the past fifty years in detail,[11] both as separate examples and as a broader phenomenon in governance.[12] It finds that the great surprise and irony is that these three customized IP systems have been a massive disappointment to the interest groups who successfully lobbied for them. The puzzle is why, when given free rein to design the rules that govern them, interest groups have done such a poor job in seizing that advantage.

These three extant case studies cover semiconductors, digital audio taping, and boat hulls. No customized intellectual property system has borne fruit for its intended beneficiaries. Semiconductor chip makers have abandoned

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Intermediaries and content owners both hate these provisions, but nonetheless have managed to maintain economic viability under them. *See* REGISTER OF COPYRIGHTS, SECTION 512 OF TITLE 17 77–82 (May 2020), https://www.copyright.gov/policy/section512/section-512-full-report.pdf; Jennifer M. Urban, Joe Karaganis, & Brianna L. Schofield, *Notice and Takedown in Everyday Practice* (Mar. 24, 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2755628. The two interest groups clashed during drafting of the legislation; the rough justice of the DMCA safe harbor provisions was the result. *See* Christopher A. Cotropia & James Gibson, *Convergence and Conflation in Online Copyright*, 105 IOWA L. REV. 1027, 1036–38 (2020).

9. *See* Glynn S. Lunney, Jr., *Copyright and the 1%*, 23 STAN. TECH. L. REV. 1, 10–12, 69–70 (2020); Abraham Bell & Gideon Parchomovsky, *Reinventing Copyright and Patent*, 113 MICH. L. REV. 231 (2014); Shyamkrishna Balganesh, *The Pragmatic Incrementalism of Common Law Intellectual Property*, 63 VAND. L. REV. 1543 (2010); Michael W. Carroll, *One Size Does Not Fit All: A Framework for Tailoring Intellectual Property Rights*, 70 OHIO ST. L.J. 1361, 1364 (2009) (describing the "problem of 'uniformity cost'—the social cost attributable to the lack of fit between our innovation goals and the blunt means of one-size-fits-all patents and copyrights"); Michael W. Carroll, *Patent Injunctions and the Problem of Uniformity Cost*, 13 MICH. TELECOMM. TECH. L. REV. 421 (2007); Michael W. Carroll, *One for All: The Problem of Uniformity Cost in Intellectual Property Law*, 55 AM. U.L. REV. 845, 846–48 (2006); Glynn S. Lunney, Jr., *Patent Law, the Federal Circuit, and the Supreme Court: A Quiet Revolution*, 11 SUP. CT. ECON. REV. 1 (2004).

10. *See* William N. Eskridge, Jr., *Politics Without Romance: Implications of Public Choice Theory for Statutory Interpretation*, 74 VA. L. REV. 275, 285–89 (1988).

11. *See infra* Part II for an explanation of the methodology for identifying these three (and only these three) IP examples.

12. *See* Rachel Sachs, *The New Model of Interest Group Representation in Patent Law*, 16 YALE J. L. & TECH. 344, 346 (2014) (stating "consumers thus far seem relatively powerless to prevent the congressional enactment of various protectionist measures in intellectual property" and that commentators "have ascribed this result to the stranglehold the relevant interest groups have over the legislative process."). While several other customized IP systems have been mooted, these three case studies are the only large-scale ones enacted in the past half-century.

specialized protections: the last registered work under the Semiconductor Chip Protection Act of 1984 (SCPA) was in 2019,[13] and from 2008 to 2012, just over a thousand such registrations occurred, against a backdrop total of 2.3 million copyright registrations.[14] The Audio Home Recording Act of 1992 (AHRA), enacted after years of music industry lobbying over the perceived threat of digital audio-taping technology, became irrelevant almost immediately.[15] There have been few suits for AHRA infringement, and not one has succeeded.[16] Boatmakers have not bothered to register a configuration under the Vessel Hull Design Protection Act of 1998 (VHDPA) since 2013,[17] and there has been precisely one VHDPA infringement case tried to a decision.[18] Dreams realized have led to bitter disappointment. This Article explores why, using a combination of historical data, legal analysis, and empirical evidence, and assesses what can be learned from the paradox of customized IP regimes that utterly fail their designers and intended beneficiaries.[19]

This Article brings together two scholarly debates. The first is within IP: should IP doctrines be tailored by industry, or comprise rules of general application? General rules reduce complexity and transaction costs, but at the cost of overprotection in some areas and underprotection in others.[20] Patent law is the best example of a generalized IP regime as most of its rules apply without regard to the technology or industry at issue.[21] Tailored regimes can maximize output and minimize social costs via different rules for different actors, though with the risks of ever-proliferating regulation and strategic

13. LED driver chip (ORG6611), Reg. No. MW0000019773 (2019).

14. *See* Dotan Oliar, Nathaniel Pattison, & K. Ross Powell, *Copyright Registrations: Who, What, When, Where, and Why*, 92 TEX. L. REV. 2211, 2224 (2014). These data likely overstate the relative level of semiconductor mask work registrations, since registration is a pre-requisite to obtain rights in a mask work, while rights in other copyrighted works inhere immediately upon fixation. *Compare* 17 U.S.C. § 908(a) *with* 17 U.S.C. § 102(a).

15. *See* Zachary Williams, *Hometaping in the Twenty-First Century: Updating the Audio Home Recording Act to Address Emerging Technologies*, 36 AIPLA Q.J. 77, 94 (2008).

16. *See infra* notes 258, 277.

17. *See Vessel Design Registration*, U.S. COPYRIGHT OFFICE, https://www.copyright.gov/vessels/list/.

18. Maverick Boat Co., Inc. v. Am. Marine Holdings, Inc., 418 F.3d 1186 (11th Cir. 2005).

19. A note on terminology: this Article uses the terms "regime," "system," and "rule set" interchangeably to avoid the tedium of repetition. *See infra* Part II on definitions.

20. *See* Alan Devlin, *Patent Law's Parsimony Principle*, 25 BERKELEY TECH. L.J. 1693, 1694–95 (2010); Carroll, *supra* note 9, at 1389–90.

21. *See* Carroll, *supra* note 9, at 1389–90.

behavior.[22] Copyright law is largely a tailored system, with special provisions for everything from cable television[23] to architecture[24] to libraries.[25] Scholars hotly debate the relative benefits, demerits, and political viability of these two types of IP systems.[26] This Article is the first to identify *customized* regimes, which are an important variant of tailored systems. Whereas tailored regimes try to maximize overall societal interests, customized systems seek to maximize one particular group's interests, although they are often cloaked in rhetoric about general welfare.[27] Thus, customized IP regimes are ones where special interests control the tailoring of the rules, resulting in systems that deliberately bias the distribution of benefits.

The second debate is within public choice. It is axiomatic that interest groups seek to influence government to regulate or abstain from regulating. Elected officials generally want to retain their positions, and interest group support can help them to do so.[28] The quid pro quo for that support is advancing policy positions that benefit these groups. IP regimes are generally seen as strongly driven by public choice considerations.[29] Public choice scholarship often focuses on how to constrain the bilateral self-interest of the regulators and the regulated to prevent undue advantage obtained through interventions such as harnessing political opposition from other stakeholders, logrolling, and mandating sunset provisions. On first inspection, customized IP regimes look like both a failure of such countermeasures and, consequently, a prime opportunity for special interests to extract outsized monopoly rents. The puzzle is why, when public choice interventions have not been effective, interest groups are so unsuccessful in writing their own specialized IP rules

22. *See, e.g.*, Miriam Marcowitz-Bitton, Yotam Kaplan, & Maayan Perel, *Recoupment Patent*, 98 N.C. L. REV. 481 (2020) (advocating tailoring patent duration based upon differential levels of investment by innovators); Shyamkrishna Balganesh, *Foreseeability and Copyright Incentives*, 122 HARV. L. REV. 1569, 1626–27 (2009) (arguing for foreseeability as tailoring mechanism); Carroll, *supra* note 9, at 1425 (pointing out that "[i]f tailored rights result in significantly differential treatment of works . . . parties would have an incentive to characterize works in a less protected category as works belonging to a category with greater protection"); Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575 (2003) (arguing that applying policy levers encourages innovation in different life sciences and technology industries).

23. *See* 17 U.S.C. § 111.

24. *See* 17 U.S.C. § 120.

25. *See* 17 U.S.C. § 108.

26. *See generally supra* notes 9, 12, 22.

27. *See* Carroll, *supra* note 9, at 1386–87 (discussing capture).

28. *See* Robert D. Tollison, *Public Choice and Legislation*, 74 VA. L. REV. 339, 341–44 (1988).

29. *See* JESSICA LITMAN, DIGITAL COPYRIGHT (2001); Jessica D. Litman, *Copyright Compromise and Legislative History*, 72 CORNELL L. REV. 857 (1987); Sachs, *supra* note 12.

when given the opportunity. Surprisingly, the promised land turns out to be barren.

This Article concludes that there are two principal reasons that customized IP regimes so often disappoint their aspirants. First, the interest groups campaigning for these specialized systems resemble fractals. Within every seemingly united, homogenous coalition is a set of smaller, squabbling parties who seek to advance their own gains even at the risk of failure for the larger enterprise.[30] Often, these fracture lines occur at the boundary between copyists and creators. In the same industry, some firms tend to innovate, others duplicate, and some do both. These interests tend to conflict, forcing coalitions to choose between narrower, more politically feasible rules and broader ones that offer greater pecuniary advantages. Interest groups are also no better at predicting economic and technological change than any other observer despite their expertise and private information.[31] They tend to encase the business models of the moment in regulation, making these rules brittle and ill-equipped to adapt to inevitable changes. It is a temptation that is perhaps impossible to resist; the current architecture suits its inhabitants, and innovation is likely to be disruptive.

The normative conclusion flowing from these findings is surprising if not shocking: there is less to be feared from customized IP regulation than one might expect because internal structural weaknesses are often its undoing. This may hold true beyond IP, extending to other areas where coalitions are unexpectedly diverse and regulating technology is a tough trick to perform.[32] History's lessons are difficult to learn: the drafters of the VHDPA (covering boat hulls) in 1998 were well aware of the failings of both the SCPA (semiconductors) and AHRA (digital audio tapes), but still could not build a better system.

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30. *See* Shubha Ghosh, *Decoding and Recoding Natural Monopoly, Deregulation, and Intellectual Property*, 2008 U. ILL. L. REV. 1125, 1181–82 (discussing how "how actual regulatory systems fail because of political compromises.").

31. This is contrary to the conventional wisdom about industry, which is that it possesses superior information about creating incentives for innovation. *See* Gregory N. Mandel, *Institutional Fracture in Intellectual Property Law: The Supreme Court Versus Congress*, 102 MINN. L. REV. 803, 871 (2017).

32. *See* Bryan Casey & Mark A. Lemley, *You Might Be A Robot*, 105 CORNELL L. REV. 287, 327–28 (2020) (noting "[t]here's no shortage of laws doomed to irrelevance because they tried to predict and regulate the way technology would develop."); *id.* at 328 n. 222 (citing examples). Gregory A. Elinson documents how the two major American political parties have internal conflicts that may offer surprising benefits as, effectively, institutional constraints. Gregory A. Elinson, *Intraparty Conflict and the Separation of Powers*, 25 U. PA. J. CON. L. (forthcoming 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3751638.

This finding leaves open the question, though, of whether this outcome results almost inevitably when interest groups pursue customized regulation, or whether it occurs only because of opposing actors' constant vigilance in the political constellation.[33] Failure may not be inevitable. The answer to this question hinges deeply on whether one believes that society would benefit if some industries had customized IP systems or thinks such bespoke rules would be detrimental. Helpfully, there have been recent proposals to enact customized IP regimes in artificial intelligence, weather data, privacy, fashion, and traditional knowledge. Debates over such rules—especially if they are eventually enacted—could help test this Article's conclusions about the risks of customized IP systems. Additionally, the diversity of this Article's three case studies offers lessons for both proponents and opponents of such regimes.

This Article makes three contributions to scholarly literature. To begin, it is the first to identify and analyze customized IP regimes as an archetype. It also provides a set of case studies valuable to IP scholars and those who study the legislative process and public choice theory.[34] Second, it identifies risks associated with the tailored approach to IP. Even if one concludes that tailoring is preferable to generalized systems, the path to that end is fraught. Interest groups may hijack the legislative process and write their own rules, ending in a universally suboptimal outcome. Special interests derive no real benefit, the public gains no more output, and policymakers waste time and resources.[35] Finally, and most provocatively, this Article posits that customized IP regimes cause far fewer problems than one might predict. This finding, although initially reassuring, also raises questions of why the effects are not worse and under what conditions this outcome is generalizable.

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33. Another important question is whether interest groups have more success when they concentrate on procedural reforms rather than substantive ones. As Representative John Dingell once said, "I'll let you write the substance . . . you let me write the procedure, and I'll screw you every time." *See* John Feehery, *Lessons Learned from John Dingell*, HILL (Feb. 11, 2019), https://thehill.com/opinion/campaign/429509-feehery-lessons-learned-from-john-dingell/. I thank Alan Trammell for this point and productive discussion of several examples.

34. In doing so, this Article is in good company at least. *See* Brett Frischmann & Mark P. McKenna, *Comparative Analysis of Innovation Failures and Institutions in Context*, 57 HOUS. L. REV. 313, 330 (2019) (noting "the best approach may be to pursue a series of micro-level studies in order to develop the knowledge base for analysis at the meso-or macro-levels"); Jessica Litman, *Copyright Legislation and Technological Change*, 68 OR. L. REV. 275, 277 n. 8 (1989) (stating "[i]nstead of addressing the theoretical legislative process literature directly, I describe an actual legislative process.").

35. *Cf.* Carroll, *supra* note 9, at 1365 (noting "the historical concentration of innovative and creative production in certain industries has given these industries certain forms of influence with public officials that must be acknowledged when fashioning policy.").

The Article proceeds as follows. The next Part is definitional; it explains what each part of "customized IP regime" means and why that matters, then briefly describes how public choice theory explains much of the configuration of extant IP systems. Then, the Article explores three major case studies of customized IP regimes: the Semiconductor Chip Protection Act of 1984, the Audio Home Recording Act of 1992, and the Vessel Hull Design Protection Act of 1998. It lays out their doctrinal features, explores their genesis, and explains their failures. The next Part draws the threads from these examples together into two themes—the fractures within interest groups, and the difficulties of managing technological and industrial change. It also assesses their implications for four areas where customized IP regimes have been proposed. The last Part concludes.

II. INTELLECTUAL PROPERTY AND PUBLIC CHOICE

This Article concentrates upon what it terms "customized IP regimes." Each part of that moniker deserves explication.

A. REGIMES

Regimes are rule sets or systems that purport to be relatively complete in themselves, not subparts of or exceptions to a larger IP framework.[36] A regime provides a full-fledged system of governance—here, for particular types of information goods. For example, a vessel's hull configuration could be protected with utility patents, design patents, copyright, trade dress, and the VHDPA, if not more.[37] Each of these rule sets is internally complete and offers varying entitlements of different duration. A regime is also comprehensive, in that it governs the IP considerations of an industry of some appreciable size—versus, for example, the extension of the term for a single patent for one patent owner.[38]

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36. *See supra* note 19.

37. *See* Benjamin Patton, *No wake zone: VHDPA makes no splash 20 years later*, BOATING INDUS. (May 8, 2019), https://boatingindustry.com/blogs/2019/05/08/no-wake-zone-vhdpa-makes-no-splash-20-years-later/; Mark Alan Thurmon, *The Rise and Fall of Trademark Law's Functionality Doctrine*, 56 FLA. L. REV. 243, 338–40 (2004) (discussing difficulty in trademark law of distinguishing unprotected utilitarian features from protectable aesthetic ones); *cf.* Commentary, *Copyright Act of 1976 — Useful Articles —Star Athletica, L.L.C. v. Varsity Brands, Inc.*, 131 HARV. L. REV. 363 (Nov. 4, 2017) (describing expansion of copyright-eligible subject matter to include some useful articles); Ferrari S.p.A. Esercizio Fabriche Automobili Corse v. Roberts Motor Co., 739 F. Supp. 1138 (E.D. Tenn. 1990) (trade dress).

38. *See, e.g.*, Pub. L. No. 95-168, 91 Stat. 1349 (95th Cong., 1977) (extending by fourteen years a design patent covering the insignia of the United Daughters of the Confederacy); Pub. L. No. 100-418, 102 Stat. 1569 (100th Cong., 1988) (extending patent on drug Lopid if manufacturer successfully submitted application for expanded indications and usage).

The relevant distinction is between a full-fledged rule set and industry or subject matter-specific variances in a rule set. For example, the inventor of a medical activity may obtain a utility patent for that innovation. However, if they do, their rights are more limited than those with patents in other fields in one important respect: a medical practitioner, or related health care entity, will not be liable for infringement such as making, using, selling, or offering to sell that medical activity.[39] This exception to liability is plainly specific to the medical industry, which lobbied strongly and successfully for its adoption.[40] But the exemption is not a complete system for regulating IP rights over medical activities. Rather, it is a tweak to the generalized rules of utility patents.[41]

There are unquestionably individual provisions of broader regimes that benefit a single interest group and are difficult to defend on principled grounds. For example, copyright law's baseline rule is that the author of a work initially owns copyright in it.[42] There is an important exception, though: works made for hire.[43] Works made for hire are created by employees or contracted parties, yet copyright vests initially in the employer or contracting party.[44] These exceptions to the normal rules for copyright ownership are plainly the result of special pleading by interest groups aiming to circumvent entitlements that authors normally enjoy.[45] Works made for hire constitute a customized

39. 35 U.S.C. § 287(c). This description omits importation since it is not clear how one could import a medical activity. *See* 35 U.S.C. § 271(a) (listing conduct that infringes a patent).

40. *See* Cynthia M. Ho, *Patents, Patients, and Public Policy: An Incomplete Intersection at 35 U.S.C. § 287(c)*, 33 U.C. DAVIS L. REV. 601, 606–07 (2000); Jonas Anderson, *Nonexcludable Surgical Method Patents*, 61 WM. & MARY L. REV. 637, 655–68 (2020).

41. Tweaks are often hotly contested by competing interest groups. *See* Sepehr Shahshahani, *The Nirvana Fallacy in Fair Use Reform*, 16 MINN. J.L. SCI. & TECH. 273, 296–304 (2015) (describing vociferous debate over Fairness in Music Licensing Act between music interests and restaurant interests).

42. 17 U.S.C. § 201(a). Determining who qualifies as an "author" is predictably challenging. *See* Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53, 61 (1884) (internal citations omitted); Ryan Vacca, *Work Made for Hire—Analyzing the Multifactor Balancing Test*, 42 FLA. ST. L. REV. 197 (2014).

43. 17 U.S.C. § 201(b).

44. *Id.*

45. *See, e.g.*, 17 U.S.C. § 203(a) (excluding works made for hire from termination rights). The bitter fight over the brief addition of sound recordings as an eligible category of works made for hire illustrates both the stakes and the political controversy of this tweak. *See* Mary LaFrance, *Authorship and Termination Rights in Sound Recordings*, 75 S. CAL. L. REV. 375, 375–76 (2002); Eric Boehlert, *Four Little Words*, SALON (Aug. 28, 2000), https://www.salon.com/2000/08/28/work_for_hire/; *Rule Reversal: Blame It on the RIAA*, WIRED (Aug. 10, 2000), https://www.wired.com/2000/08/rule-reversal-blame-it-on-riaa/.

provision, but do not sweep broadly enough for a customized *regime*: they mostly function according to the usual copyright rules.[46]

A word on methodology is in order. This Article explores the SCPA, AHRA, and VHDPA because they appear to be the only examples of major customized IP regimes enacted in at least the last fifty years, if not longer.[47] There are examples of much smaller customized regimes. For example, only the United States Olympic and Paralympic Committee,[48] a federally chartered non-profit corporation,[49] can use certain terms for specified commercial purposes,[50] including the Committee's name and symbol; the International Olympic Committee and International Paralympic Committee symbols; and the words "Olympic," "Olympiad," and "Pan-American," among others.[51] This set of provisions, which confers nearly exclusive trademark-like rights upon a single corporation,[52] was sufficiently controversial to draw (but survive) a First Amendment challenge from the organizers of the Gay Olympics.[53] Similar provisions exist for organizations such as the Boy Scouts[54] and Girl

46. For other exceptions, see 17 U.S.C. §§ 302(c) (duration); 17 U.S.C. §§ 106A (moral rights); and 17 U.S.C. §§ 101 (excluding works made for hire from Section 106A).

47. I used two techniques to verify this claim. First, I checked several prominent intellectual property law textbooks to search for IP systems that meet this Article's criteria. The books list plenty of tweaks, but only these three examples of genuine customized regimes. Second, several research assistants and I searched the Congress.gov database for IP-related legislation enacted into law from 1971 (the 92nd Congressional session) to 2022 (the 117th Congressional session). We classified legislation as potentially IP-related if it contained one of ten keywords: intellectual property, trademark, copyright, patent, trade secret, industrial design, infringement, Title 17, Title 35, or Title 15. This generated 1229 results. We checked approximately 35% (34.9%) of these results to see if any instantiated a system that qualified as a customized IP regime. None did. *See* Appendix A (describing methodology). Thus, the Article's claim that the SCPA, AHRA, and VHDPA are the only significant regimes to be enacted in the past fifty years appears to be accurate.

48. *See* 36 U.S.C. § 220501(b)(7).

49. 36 U.S.C. § 220502(a).

50. The Committee can file civil litigation against a person who, without authorization, "uses for the purpose of trade, to induce the sale of any goods or services, or to promote any theatrical exhibition, athletic performance, or competition" the Committee's name or logo, or any of the specified words in a way "tending to cause confusion or mistake, to deceive, or to falsely suggest a connection" with the Committee or its activities. 36 U.S.C. §§ 220506(c)(1)-(3). It can similarly bring suit for use of marks, trade names, signs, symbols, or insignia falsely representing association with or authorization by the Committee or its international equivalents. 36 U.S.C. § 220506(c)(4).

51. 36 U.S.C. § 220506(a).

52. S.F. Arts & Athletics, Inc. v. U.S. Olympic Comm., 483 U.S. 522, 542–48 (1987) (holding that the USOC is not a government entity even though it was established by a Congressionally-enacted charter).

53. *Id.* at 531–41.

54. 36 U.S.C. § 30905.

Scouts,[55] Little League baseball,[56] and the National Tropical Botanical Garden.[57] The Red Cross has exclusive rights to its name and insignia backed by criminal penalties.[58] These provisions are troubling, and ought to be constitutionally suspect,[59] but they are relatively minor in scope: they effectively grant the recipient entities unassailable trademark rights, which could be obtained to almost the same effect through standard trademark provisions such as infringement actions,[60] incontestability,[61] and dilution enforcement.[62] Moreover, the passage of such legislation is likely easier for the same reason that its ultimate effects are harder to measure: most of these entities have few competitors, and those competitors typically lack power as interest groups in the political contests over these micro-regimes.

B. INTELLECTUAL PROPERTY

Next, the regime at issue must be an intellectual property one. Defining "intellectual property" is a fraught exercise; this Article describes IP as a set of state-conferred, primarily exclusive rights over information.[63] IP systems commonly specify eligible subject matter, mechanisms to obtain protection, rights, infringement, remedies, and so forth. Many other regimes indirectly

55. 36 U.S.C. § 80305.

56. 36 U.S.C. § 130506.

57. 36 U.S.C. § 153506.

58. 18 U.S.C. § 706.

59. *See* Sonia K. Katyal, *Trademark Intersectionality*, 57 UCLA L. REV. 1601, 1656–59 (2010); Robert N. Kravitz, *Trademarks, Speech, and the* Gay Olympics *Case,* 69 B.U. L. REV. 131, 160–66 (1989).

60. *See* 15 U.S.C. § 1114(1) (registered marks); 15 U.S.C. § 1125(a)(1) (unregistered marks); *see generally* David S. Welkowitz, *Reexamining Trademark Dilution*, 44 VAND. L. REV. 531, 569 (1991) (noting "[i]n trademark infringement cases . . . strength often is measured by secondary meaning.").

61. *See* Rebecca Tushnet, *Registering Disagreement: Registration in Modern American TrademarkLaw*, 130 HARV. L. REV. 867, 902–06 (2017).

62. *See* Leah Chan Grinvald, *Shaming Trademark Bullies*, 2011 WIS. L. REV. 625, 639–40.

63. Pithy definitions are surprisingly difficult to find. For one useful, slightly extended example, see Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287, 291–96 (1988).

govern IP, such as tax,[64] tort,[65] or criminal law.[66] These regimes may shape innovation as much or more than IP laws, but they are not IP rules.

C. CUSTOMIZED

To complete the definition's triumvirate, "customized" indicates that a regime is not just subject matter-specific, or industry-specific, but also largely dictated by the affected industry or interest group. This definition seems to imply a difficult hypothetical comparison with how the system would have operated without interest group intervention.[67] Fortunately, there are telling indicators of customized regimes. First, IP laws are rarely crafted in secrecy. Interest groups ask for what they want.[68] Even when a mole inserts an industry-specific handout in the dead of night, someone notices with relative alacrity.[69] Second, there is virtually always a generalized IP regime as a backdrop for comparison: it is the alternative with which an interest group is dissatisfied. Third, the process of crafting legislation is illuminating. Enactment of a customized regime often requires public negotiation among affected interests. Plus, on the purely bureaucratic side, Congress prefers to keep the U.S. Code tidy; new customized regimes should go into new chapters rather than being stuffed into existing ones.[70]

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64. *See* Xuan-Thao Nguyen & Jeffrey A. Maine, *The History of Intellectual Property Taxation: Promoting Innovation and Other Intellectual Property Goals*, 64 SMU L. REV. 795 (2011).

65. For example, a patented method for causing a vegetarian burger to look like a meat one might create liability for unfair competition if consumers were deceived. *See* U.S. Patent No. 5,571,545; Jason Tidd, *Kansas Governor Signs Law Requiring Disclaimers on Veggie Burgers, Plant-Based Meat Labels*, TOPEKA CAPITAL-JOURNAL (May 5, 2022), https://www.cjonline.com/story/business/agricultural/2022/05/05/kansas-fake-meat-label-law-targets-plant-based-alternatives/9663063002/.

66. *See* Whistler Corp. v. Autotronics, Inc., 14 U.S.P.Q. 2d (BNA) 1885, 1886 (N.D. Tex. 1988); VA. CODE ANN. § 46.2-1079 (2022) (banning use of radar detectors).

67. *See* Jeffrey Rosen, *Class Legislation, Public Choice, and the Structural Constitution*, 21 HARV. J.L. & PUB. POL'Y 181, 182–90 (1997).

68. *See* Derek E. Bambauer, *Paths or Fences: Patents, Copyrights, and the Constitution*, 104 IOWA L. REV. 1017, 1037 (2019); Julie Zerbo, *Protecting Fashion Designs: Not Only "What" But "Who?"*, 6 AM. U. BUS. L. REV. 595 (2017) (advocating for customized fashion design protection).

69. *See* LaFrance, *supra* note 45 (describing covert insertion in unrelated bill of provision designating sound recordings as works made for hire by Senate staffer who shortly thereafter was hired by the Recording Industry Association of America).

70. Despite their substantive disagreements, witnesses testifying about the draft SCPA bill agreed it should be codified in a separate chapter of Title 17, apart from the rest of the Copyright Act. *Copyright Protection for Semiconductor Chips: Hearing on H.R. 1028 Before the Subcomm. on Cts., C.L. & the Admin. of Just. of the H. Comm. on the Judiciary*, 98th Cong. 54 (1983) [hereinafter *1983 SCPA Hearing*] (prepared remarks of Rep. Norman Mineta, Representative from California).

This Article also employs the term "customized" to highlight its contribution to the ongoing scholarly debate over whether IP regimes ought to be general-purpose or tailored by industry.[71] Generalized regimes contain few and ideally zero provisions that differentiate by industry or subject matter. By contrast, tailored regimes try to contour protection more precisely to each sort of information good to minimize the social costs of IP. Yet this debate makes a critical assumption: that the legislative process constrains rent-seeking by any one interest group.[72] For broader systems of IP law, such as copyright and patent, that assumption is generally defensible.[73] For example, the America Invents Act of 2011 did not alter how patent infringement damages are calculated due to insoluble divisions among interest groups—here, between information technology firms and pharmaceutical ones.[74] Changes that would have benefited technology patent holders were blocked because they would have harmed biotech ones.[75] This political dialectic keeps most generalized IP systems relatively balanced among competing interests.

However, this Article challenges the standard assumption about interest group-imposed constraints in more fine-grained IP systems. Customized schemes in industries with significant economic impact (and, concomitantly, important political influence) can enable meaningful rent-seeking by interest groups.[76] The three case studies analyzed here are ones that affect comparatively large industries. While there are customized IP regimes with smaller scope, they are less troubling because of their lesser economic impact and reduced potential for social cost from excessive rents. For example, federal

71. *See supra* notes 9, 12, 22.

72. *See* Litman, *supra* notes 29, 34 (describing copyright law as based on compromises among interest groups).

73. *See* Ghosh, *supra* note 30, at 1180 (discussing the "the broad areas of intellectual property that have not been the product of capture and reflect genuine debates.").

74. *See* Susanne Hollinger, *The America Invents Act—Overview and Implications*, 3 ACS MED. CHEM. LETTERS 174, 174 n.3 (Mar. 8, 2012), doi: 10.1021/ml3000337; Joe Matal, *A Guide to the Legislative History of the America Invents Act: Part I of II*, 21 FED. CIR. B.J. 435, 445 (2012); Robin Feldman & W. Nicholson Price II, *Patent Trolling: Why Bio & Pharmaceuticals Are At Risk*, 17 STAN. TECH. L. REV. 773, 776 (2014).

75. *See* Mandel, *supra* note 31, at 860–61; David W. Opderbeck, *Patent Damages Reform and the Shape of Patent Law*, 89 B.U. L. REV. 127 (2009). Even within one industry, firms may switch roles, seeking to enforce patent rights at one point and defending against infringement claims at another. *See* Mandel, *supra* note 31, at 839–40.

76. The recreational boating industry seems to have political influence greater than its economic impact, perhaps because it is concentrated in the political swing state of Florida. *See* Bradley J. Olson, *The Amendments to the Vessel Hull Design Protection Act of 1998: A New Tool for the Boating Industry*, 38 J. MAR. L. & COM. 177, 178, 178 n. 5 (2007).

law provides the Girl Scouts,[77] Little League baseball,[78] and the National Tropical Botanical Garden[79] with exclusive rights over their names and brands. Even if normatively troubling, these tiny, customized regimes are minor nuisances. These are little giveaways by government—easier for special interests to obtain but less problematic in social cost.

An industry-specific regime can be a customized one, but it need not be; Congress is capable of tailoring rules that balance competing interests. For example, both the Plant Protection Act of 1930[80] (PPA) and the Plant Variety Protection Act of 1970[81] (PVPA) are tailored regimes, operating as alternatives to standard utility patents for plants, but neither is a customized one.[82] In each case, Congress was concerned that extant patent law excluded plants, and acted to confer protection over them that is nearly identical to that available to other inventions, under similar requirements, via the wider Patent Act.[83]

D. PRIVATE BENEFICIARIES

One final definitional point: the Article considers only customized IP regimes that confer rights upon private parties. There are—perhaps unexpectedly—regimes that create exclusive IP entitlements for the federal government. For example, from 1974 to 2021, *federal criminal law* prohibited anyone without authorization from knowingly and for profit reproducing, using, or manufacturing the character, name, or slogan of the U.S. Forest Service mascot Woodsy Owl.[84] Such instances of self-dealing by the federal government are outside the realm of public choice issues because no interest group is likely to lobby Congress for exclusive governmental control over IP.

E. PUBLIC CHOICE

The public choice aspect of the Article deserves brief explanation. Public choice approaches to regulation import economic insights into political theory: lawmakers, like everyone else, respond to incentives, and are particularly

77. 36 U.S.C. § 80305.

78. 36 U.S.C. § 130506.

79. 36 U.S.C. § 153506.

80. Pub. L. No. 71-245, 46 Stat, 376, 376 (71st Congress 1930) (codified at 35 U.S.C. §§ 161–164); *see* Max Stul Oppenheimer, *The "Reasonable Plant" Test: When Progress Outruns the Constitution*, 9 MINN. J.L. SCI. & TECH. 417, 418 (2008).

81. Pub. L. No. 91-577, 82 Stat. 1542, (codified at 7 U.S.C. § 2321).

82. *See* J.E.M. Ag. Supply v. Pioneer Hi-Bred Int'l, 534 U.S. 124, 132 (2001).

83. *See* Imazio Nursery, Inc. v. Greenhouses, 69 F.3d 1560, 1563 (Fed. Cir. 1995).

84. Pub. L. No. 93-318, 88 STAT. 244, 244–45 (93rd Congress 1974), *codified at* 18 U.S.C. § 711a, *repealed by* Pub. L. No. 116–260, div. O, title X, § 1002(6), 134 STAT. 2155 (116th Congress, Dec. 27, 2020).

motivated to ensure that they remain in office through re-election.[85] Nearly all voters—their constituents—take little notice of regulatory efforts[86] aside from high-profile issues such as abortion.[87] Collective action problems rule the day: voters can largely ignore legislative debates because any effects upon them are relatively minimal and because they can depend upon specialized interest groups to put in the work.[88] These interest groups are the protagonists in the public choice narrative. They have a sufficiently concentrated interest in specific issues to invest in efforts to persuade lawmakers to adopt their position and to rally others to their cause.[89]

From a public choice perspective, IP questions are not special at all: they are simply one more way that a particular set of interests can obtain an advantage through legislation.[90] However, IP legislation is accepted as driven principally, if not exclusively, by interest groups.[91] IP regimes have important public choice implications for at least two reasons. First, at base, IP laws involve the conferral of government-granted monopolies over valuable information, often for a significant period of time.[92] Vessel hull design registrations create exclusivity for ten years; utility patents do so for twenty; copyright entitlements generally last for the life of the author plus seventy more years; trademarks can last for as long as human commerce does. Second, IP issues often create a clash of titans. Patent law issues can pit major

85. *See* William N. Eskridge Jr. & Philip P. Frickey, *Legislation Scholarship and Pedagogy in the Post-Legal Process Era*, 48 U. PITT. L. REV. 691, 704 (1987) (noting "public choice legisprudence starts with the assumption that people will behave in their rational self-interest."); Daniel A. Farber & Philip P. Frickey, *The Jurisprudence of Public Choice*, 65 TEX. L. REV. 873, 900–01 (1987).

86. *See* Michael D. Gilbert, *Single Subject Rules and the Legislative Process,* 67 U. PITT. L. REV. 803, 844–45 (2006).

87. *See, e.g.*, Corinna Barrett Lain, *Upside-Down Judicial Review*, 101 GEO. L.J. 113, 155 (2012) (describing legislative avoidance of abortion legislation, since the "issue was too hot for the political process to handle, and they knew it.").

88. *See* Timur Kuran & Cass R. Sunstein, *Availability Cascades and Risk Regulation*, 51 STAN. L. REV. 683, 704 (1999).

89. *See* Jerry L. Mashaw, *The Economics of Politics and the Understanding of Public Law*, 65 CHI.-KENT L. REV. 123, 127 (1989) (stating "law is to be understood as a set of 'deals' among those self-interested actors who have the positions and resources to deflect public power to the pursuit of their private ends.").

90. *See* Ghosh, *supra* note 30, at 1179–81.

91. *See* Mandel, *supra* note 31, 865–68; Litman, *supra* note 29, 72 CORNELL L. REV. at 869, 878. Interestingly, IP legislation is rarely partisan in political or ideological terms; interest groups are happy to support legislators from both major parties so long as those officials advance the groups' interests. *See* Mandel, *supra* note 31, at 838–39.

92. *See, e.g.*, John E. Lopatka & William H. Page, *Monopolization, Innovation, and Consumer Welfare*, 69 GEO. WASH. L. REV. 367, 394 (2001).

pharmaceutical firms against their generic competitors.[93] Trademark law may involve a contest between fashion designers and retail chains.[94] Copyright law can put information technology giants on opposing sides.[95] Most voters care nothing for these contests. But interest groups with money at stake may well decide that the game is worth the candle, and back candidates who will advance their interests.[96] The close involvement of industry groups in shaping IP legislation that will benefit their interests is thus unsurprising.

Broad, general-purpose IP systems embody the compromises produced by clashing interest groups that public choice theory analyzes as typifying the legislative process. Copyright law is best explained as Congressional reification of bargains arrived at privately by the different interest groups involved, from musicians to librarians.[97] The shift from a first-to-invent priority system to a first-to-file (or publicly disclose) one under the America Invents Act (AIA) was made possible because patent interest groups saw the change as either non-threatening or beneficial.[98] When competing interests clash, change to general-purpose IP regimes becomes impracticable. The AIA did not include proposed reforms to damages calculations because the information technology and biotechnology industries could not agree.[99] Similarly, public choice theory neatly accounts for a puzzling difference between patent and copyright reform: Congress has proved willing to extend copyright terms in an ongoing fashion, but has not done so for patents.[100] Renewed copyrights benefit relevant interest groups almost uniformly,[101] while patent interests face mixed prospects: they would benefit from longer terms as patent owners, but face greater liability as defendants.[102] Thus, in most contexts, IP legislation is kept

93. *See* Novartis Pharmas. Corp. v. Accord Healthcare, 39 F.4th 1013 (Fed. Cir. 2022), https://cafc.uscourts.gov/opinions-orders/21-1070.OPINION.6-21-2022_1967294.pdf.

94. *See* Wal-Mart Stores v. Samara Bros., Inc., 529 U.S. 205 (2000).

95. *See* Google LLC v. Oracle Am., Inc., 593 U.S. __ (2021).

96. *See* Caperton v. A.T. Massey Coal Co., Inc., 556 U.S. 868 (2009) (requiring recusal of West Virginia Supreme Court justice in case involving coal company that donated $3 million to his campaign).

97. *See* Litman, *supra* note 29.

98. *See* Mandel, *supra* note 31, at 834–35.

99. *See supra* notes 74–75.

100. *See* Dennis S. Karjala, *Distinguishing Patent and Copyright Subject Matter*, 35 CONN. L. REV. 439, 464 (2003) (searching for a policy rationale for the disparity).

101. *See* Eli Dourado & Alex Tabarrok, *Public choice perspectives on intellectual property*, 163 PUB. CHOICE 129, 134 (2015).

102. *See* Karjala, *supra* note100, at 464 n.95 (citing private communication from Mark A. Lemley that "patent owners are often also potential patent infringers and thus find themselves as both plaintiff and defendant at one time or another in patent litigation.").

in some rough balance from a public choice perspective by the clash of interest groups.[103]

However, customized IP regimes appear to embody the worst-case scenario of public choice theory: rules written by and for a unified interest group, unchecked by competing parties. The puzzle this Article explores is why the resulting systems have been so ineffective for their advocates.

F. EFFECTIVENESS

This Article contends that the three customized IP regimes it analyzes have been ineffective, thus raising the question of how to assess the efficacy of legislation—a challenging problem.[104] Some legislation is readily analyzed: for example, regulation intended to expand the number of children covered by health insurance can be evaluated based on the number of additional minors insured, controlling for other factors.[105] IP laws, however, operate indirectly by providing property rights rather than funding. This makes gauging effectiveness harder since it requires determining what outputs are considered valuable and then evaluating the causal connection between IP rights and that output.[106] Moreover, the public rationale for enacting an IP regime may be different than the true legislative purpose (if such a thing exists), the goals of the interest groups pressing for the bill, or both.[107] With those caveats, there are four plausible gauges for effectiveness of a customized IP regime: (1) impact on innovation, (2) transition between technologies and business models, (3) capture of private rents, and (4) interest group unity.

First, generating innovation is the standard utilitarian justification for IP rights.[108] The rationale behind customized regimes is that without the new set of rights, the affected industry will produce less innovation. A corollary is that

103. *But see* William F. Shughart II & Diana W. Thomas, *Intellectual Property Rights, Public Choice, Networks, and the New Age of Informal IP Regimes*, 23 S. CT. ECON. REV. 169, 188–89 (2015).

104. *See* Christopher Robert & Richard Zeckhauser, *The Methodology of Normative Policy Analysis*, 30 J. POL'Y ANALYSIS & MGMT. 613 (2011); HOW CAN GOVERNMENTS LEVERAGE POLICY EVALUATION TO IMPROVE EVIDENCE INFORMED POLICY MAKING?, OECD (2020), https://www.oecd.org/gov/policy-evaluation-comparative-study-highlights.pdf.

105. *See* Janet L. Dolgin, *Class Competition and American Health Care: Debating the State Children's Health Insurance Program*, 70 LA. L. REV. 683, 703–16 (2010).

106. This is a utilitarian approach to efficacy. There are other rationales for instantiating IP rights. *See* William W. Fisher, *Theories of Intellectual Property*, *in* NEW ESSAYS IN THE LEGAL AND POLITICAL THEORY OF PROPERTY 168 (Stephen Munzer, ed., 2001).

107. *See* Daniel A. Farber & Philip P. Frickey, *Legislative Intent and Public Choice*, 74 VA. L. REV. 423, 426–29 (1988).

108. *See* Michael J. Burstein, *Rules for Patents*, 52 WM. & MARY L. REV. 1747, 1750–51 (2011).

existing IP options will not suffice to attain the desired level of innovation, and that the proposed regime will fill gaps. For a regime to be effective in spurring innovation, the affected industries must avail themselves of it. Thus, data such as the number of registrations and lawsuits are proxies for this criterion.

A second criterion is efficacy in managing an industry's transition between technologies and business models.[109] Here, the customized IP regime is a stopgap intended to cushion dependence upon a soon-to-be-replaced technology or business model. The new technology might not require any IP protection or might be amenable to standard forms of IP rights. Utilization of the customized regime is less telling here because usage decreases with time and adaptation. However, to be effective, the customized regime must occur during a transition, and must help the industry to cope with that shift.

The third criterion is whether the customized IP regime enables an interest group to capture significant monopoly rents.[110] Efficacy depends on whether that group earns more from the change relative to the status quo. Utilization is relevant to capturing private benefits unless low levels of protection confer outsized gains.

The last criterion evaluates the use of a customized regime by interest groups in wholly instrumental fashion: to create unity among subgroups with disparate goals and motivations.[111] IP rights are thus a means, not an end. This is the most nebulous of the four criteria and the most difficult for which to draw definite conclusions.

The next Part explicates three case studies of customized IP regimes. It proceeds in chronological order because history matters: each regime's evolution has a gravitational effect on future ones.[112]

109. *See* Peter S. Menell, *Can Our Current Conception of Copyright Law Survive the Internet Age,* 46 N.Y.L. SCH. L. REV. 63, 164–77 (2002).

110. *See* David Fagundes, *Efficient Copyright Infringement*, 98 IOWA L. REV. 1791, 1799–800 (2013); Sarah K. Harding, *Perpetual Property*, 61 FLA. L. REV. 285, 315–16 (2009).

111. *See* Roderick M. Hills Jr. & David Schleicher, *Building Coalitions Out of Thin Air: Transferable Development Rights and "Constituency Effects" in Land Use Law*, 12 J. LEG. ANALYSIS 79, 108–10 (2020).

112. *See, e.g.*, Hearings Before the Subcomm. On Courts and Intellectual Property of the House Comm. On the Judiciary, 105th Cong. 3–24 (1997) [hereinafter *1997 VHDPA Hearing*] (statement and testimony of Professor William T. Fryer III, reflecting on proposed vessel hull legislation in light of SCPA and previous proposed industrial design legislation).

III. THE ABCS OF CUSTOMIZED IP REGIMES: CASE STUDIES OF AUDIO, BOATS, AND CHIPS

This Part explores three case studies of customized IP regimes; namely, for semiconductors (SCPA), digital audio tapes (AHRA), and boat hulls (VHDPA). It summarizes the substantive provisions of each Act, and then describes the lobbying and legislative discourse that led to its adoption. Finally, it explores and explains why each Act failed to deliver for its proponents. Each customized regime suffered from similar flaws: an inescapable tension between political viability and economic impact, and vulnerability to innovation that upended the industry technologies and business models that were encoded in the statutes.

A. SEMICONDUCTOR CHIP PROTECTION ACT OF 1984

1. How the SCPA Functions

The SCPA responded to the putative existential threat to the nascent semiconductor industry—and the growing number of economic sectors dependent upon it—by conferring protection upon any mask work[113] fixed[114] in a semiconductor chip product[115] with the authority of the work's owner.[116] However, mask works are not eligible if they are not original;[117] if they are standard designs in the semiconductor industry, or combinations of such designs that lack originality;[118] or if the work constitutes an idea, procedure, process, discovery, or other subject matter traditionally ineligible for copyright protection.[119] Protection lasts for up to ten years if the mask work owner registers the work with the Copyright Office within two years of first commercially exploiting it.[120] Registration is a prerequisite to commencing an infringement suit.[121] A mask work's owner holds the exclusive right to reproduce the work, to import or distribute a semiconductor chip product embodying it, and to induce or knowingly cause someone else to engage in

113. 17 U.S.C. §§ 901(a)(1) (conferring protection); 901(a)(2) (defining "mask work").

114. 17 U.S.C. § 901(a)(3) (defining "fixed"); *cf.* 17 U.S.C. § 101 (defining "fixed" for broader Copyright Act).

115. 17 U.S.C. §§ 902(a)(1); 901(a)(1) (defining "semiconductor chip product").

116. 17 U.S.C. §§ 902(a)(1); 901(a)(6) (defining owner of mask work).

117. 17 U.S.C. § 902(b)(1).

118. 17 U.S.C. § 902(b)(2).

119. 17 U.S.C. § 902(c); *cf.* 17 U.S.C. § 102(b) (excluding similar subject matter); Baker v. Selden, 101 U.S. 99, 102 (1879) (holding a "claim to an invention or discovery of an art or manufacture . . . can only be secured by a patent.").

120. 17 U.S.C. § 904; *see* 17 U.S.C. § 908.

121. 17 U.S.C. § 910(b)(1).

such reproduction, importation, or distribution.[122] Remedies mirror those of the Copyright Act, with one significant enhancement: the plaintiff can elect statutory damages of up to $250,000 per mask work infringed.[123]

The SCPA contains significant defenses and limitations to liability, however. As this Part will subsequently explain, these provisions narrowing the scope of the SCPA's rights are simultaneously vital to its political success and fatal to its efficacy. First, the legislation immunizes the near-ubiquitous practice of reverse engineering chips to determine the mask works needed to create them.[124] Nominally, the exemption for reverse engineering is limited to reproduction "for the purpose of teaching, analyzing, or evaluating the concepts or techniques embodied in the mask work or the circuitry, logic flow, or organization of [its] components."[125] However, anyone who engages in such dissection is immune if they incorporate the results into an original mask work made to be distributed.[126] These provisions offer more certain protection than the case-by-case assessment required by fair use although, like fair use, they were intended to codify industry norms.[127] Second, the SCPA includes a first sale doctrine: the owner of an authorized semiconductor chip product can use, distribute, import, or otherwise dispose of it without further permission.[128] Lastly, the legislation includes a small but important variant on property law's bona fide purchaser for value rule:[129] innocent purchasers[130] of infringing semiconductor chip products are not liable for importation or distribution prior to receiving notice that the products contain a protected mask work.[131] For products purchased before but imported or distributed after receiving such notice, the innocent purchaser's liability is limited to a reasonable per-

122. 17 U.S.C. § 905. These entitlements are smaller than those applying to copyrighted works. *See* 17 U.S.C. §§ 106, 106A, 602.

123. *Compare* 17 U.S.C. § 911(c), *with* 17 U.S.C. § 504(c)(2) (creating maximum statutory damage award of $150,000, and only for willful infringement).

124. 17 U.S.C. § 906(a). Fair use typically excuses such reverse engineering from liability. *See* 17 U.S.C. § 107 (fair use); *see, e.g.*, Sega Enters., Ltd. v. Accolade, Inc., 977 F.2d 1510, 1514 (9th Cir. 1992) (disassembling object code to access unprotected elements is fair use).

125. 17 U.S.C. § 906(a)(1).

126. 17 U.S.C. § 906(a)(2).

127. *See* Campbell v. Acuff-Rose Music, 510 U.S. 569, 576–77 (1994); 1983 SCPA Hearing, *supra* note 70, at 27–28, 34 (Dunlap statement); John G. Rauch, *The Realities of Our Times: The Semiconductor Chip Protection Act of 1984 and the Evolution of the Semiconductor Industry*, 3 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 403, 432 (1993).

128. 17 U.S.C. § 906(b).

129. *See* Shyamkrishna Balganesh, *Copyright and Good Faith Purchasers*, 104 CALIF. L. REV. 269, 271–74 (2016) (describing rule and Copyright Act's deliberate deviation from it, apart from SCPA).

130. Defined at 17 U.S.C. § 901(a)(7).

131. 17 U.S.C. § 907(a)(1).

unit royalty.[132] And, further following property doctrine, the innocent purchaser's immunity runs with the chip: it protects anyone who directly or indirectly buys an infringing product from such a purchaser.[133] The SCPA thus departs from copyright law's usual strict liability approach to direct infringement[134] by adding a scienter requirement and from its standard approach to injunctive relief[135] by imposing only liability rule-style relief[136] when the requisite mental state is lacking. While these limitations do not completely defang the Act, they clearly lessen its bite.

2. The Genesis of the SCPA

In 1984, "Congress created the first significant intellectual property right in nearly one hundred years" by passing the Semiconductor Chip Protection Act (SCPA).[137] The chair of the relevant House committee described the need for it in stark terms: performing research and development for a new chip cost millions of dollars, but copying it could be done in a few months for orders of magnitude less expense.[138] The consequence for semiconductor firms, whose social and economic role was unquestioned, was that "innovation, the lifeblood of industry, is jeopardized."[139] Congress responded with relative alacrity. Over six years, it debated legislation, first grounded in the Copyright Act and then as a customized regime.[140] After complex parliamentary maneuvers, Congress passed the SCPA, and President Ronald Reagan signed it.[141] The SCPA was viewed as a major advance, not only as protection for a vital source of innovation,[142] but also as a model for specialized regimes for other complex technologies such as computer software.[143]

The SCPA's genesis was a play in two acts. IP protection for semiconductor chips was seriously considered in 1979, in far simpler form: the legislation would have added one sentence to the definition of pictorial,

132. 17 U.S.C. §§ 907(a)(2), (d).

133. 17 U.S.C. § 907(c).

134. *See* Balganesh, *supra* note 129, at 273.

135. *See* 17 U.S.C. § 502(a); eBay v. MercExchange, 547 U.S. 388, 391–92 (2006).

136. *See* Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1092 (1972).

137. Robert W. Kastenmeier & Michael J. Remington, *The Semiconductor Chip Protection Act of 1984: A Swamp or Firm Ground?*, 70 MINN. L. REV. 417, 419 (1985).

138. *Id.* at 437–38.

139. *Id.* at 432, 438.

140. *Id.* at 425–30.

141. *Id.* at 428–30.

142. *Id.* at 431–32; *see* Pamela Samuelson & Suzanne Scotchmer, *The Law and Economics of Reverse Engineering*, 111 YALE L.J. 1575, 1596–98 (2002).

143. *See* Pamela Samuelson, *Creating a New Kind of Intellectual Property: Applying the Lessons of the Chip Law to Computer Programs*, 70 MINN. L. REV. 471 (1986).

graphical, and sculptural works in the Copyright Act to include the masks used to imprint patterns on chips and the patterns themselves.[144] It made no other semiconductor-specific adjustments and placed chip protection firmly within the skein of copyright. The linguistic parsimony of the proposal largely explains its undoing. Hearings on the bill took place in Santa Clara, California, then the heart of the semiconductor industry. The lineup of witnesses was led off by a representative of the Copyright Office, who evinced a distinct lack of enthusiasm.[145] The next set of witnesses were from Intel (including Andy Grove, its president and the representative of the American Electronics Association) and academia; they were largely enthusiastic about the proposal, but—importantly—disagreed on the economic and moral implications of copying chips, particularly via reverse engineering.[146]

The last group of witnesses came as a surprise:[147] they were late additions to the hearing, evidently due to administrative complications.[148] They also were not entirely welcome, since they had come to bury the bill, not praise it. These firms, including National Semiconductor, Texas Instruments, and Fairchild Camera & Instrument Corporation, were deeply concerned about the bill's potential effects on reverse engineering of chips, including whether the practice would qualify as fair use.[149] As several witnesses noted, the American semiconductor industry was a diverse group of firms: reverse engineering enabled some companies to compete more effectively, while others wanted to prohibit the practice to safeguard their innovations.

There were also industry-specific business practices that divided firms. Many contracts for semiconductors mandated the chips be available from both a primary supplier and a "second source" supplier, who could step in if the primary manufacturer faltered.[150] Firms likely to be primary suppliers preferred stronger IP protection and opposed reverse engineering. Ones likely to be relegated to backup status as "second source" suppliers preferred cheaper

144. 1979 SCPA Hearing, *supra* note 1.

145. *Id.* at 7–11 (testimony of Jon Baumgarten, General Counsel, U.S. Copyright Office).

146. *Id.* at 22–50; *id.* at 28 (disagreement over "[w]hether that [copying] is a reputable practice or not.").

147. 1983 SCPA Hearing, *supra* note 70, at 7 (statement of Rep. Norman Mineta, who noted that "last time when there was what we thought was united support for the legislation . . . everyone was surprised at a company at that point that expressed opposition to the bill.").

148. 1979 SCPA Hearing, *supra* note 1, at 62.

149. *Id.* at 50–62, 77–79. John Finch, a vice president at National Semiconductor, stated that "[t]o my knowledge at this time we are not doing that [copying competitor's chips]." *Id.* at 69. Shortly thereafter, Andy Grove of Intel introduced photographs of Intel's 8000-bit programmable reload memory chip—and of National Semiconductor's duplicate of it. *Id.* at 72.

150. *Id.* at 52.

copying and supported making reverse engineering expressly lawful. Without legislation that blessed reverse engineering, entities employing it would have to rely on uncertain, expensive, and context-specific defenses such as fair use.[151]

The split on reverse engineering demonstrates an important point about the semiconductor community as an interest group. The industry was not monolithic; rather, it was a mixture of copyists and creators (and firms that were both) whose interests in IP protection diverged at the pressure point of reverse engineering. This heterogeneity of views almost certainly explains why the Semiconductor Industry Association (SIA), a broad-based trade group, decided not to take a position on the proposal in 1979.[152] The deadlock among the different semiconductor entities sapped political support for the bill, which died in committee.[153]

By 1983, the industry had unified to support the SCPA.[154] This time, every member of SIA's board of directors signed a letter backing the legislation—including the president of National Semiconductor, who had been in the opposition ranks four years earlier.[155] Those four years had wrought important changes in semiconductors—microprocessors had become much more complex, and non-U.S. firms had gained substantial shares in some chip markets—but the major change was in the substance of the legislation.[156] The original bill's simple copyright scheme had become a complex, customized system for protecting industrial design.[157] Framing semiconductor protections as outside standard copyright was useful from a public choice perspective: it diminished opposition from external stakeholders such as the Association of American Publishers, which sought to isolate these provisions from those affecting literary works—and hence from the economic interests of its members.[158] Chipmakers, who were principally copyists, were mollified by other alterations. The duration of protection for a covered mask work had shrunk from seventy-five years to ten.[159] The threat to reverse engineering was mitigated not only by an express exemption from liability, but also by overtly

151. *Id.* at 54 (Finch statement), 57 (statement of James Early, Director, Fairchild Camera & Instrument Corp.), 78 (statement of Texas Instruments).

152. *Id.* at 73.

153. 1983 SCPA Hearing, *supra* note 70, at 2, 68.

154. *Id.* at 80 (statement of Intel counsel Dunlap).

155. *Id.* at 81.

156. *Id.* at 82–83 (discussion with Dunlap).

157. *Id.* at 43.

158. *Id.* at 102–06 (statement of Jon A. Baumgarten, Copyright Counsel, Association of American Publishers).

159. *See* 17 U.S.C. § 904(b); Samuelson, *supra* note 143, at 492–94.

authorizing commercial exploitation of its results.[160] Innocent purchasers—those without notice that a semiconductor chip product contained a protected mask work—were absolved of liability, along with their consumers.[161] This clearly narrowed liability, both relative to the original proposal and to broader copyright law, and mitigated the concerns of distributors of items containing chips.[162]

The troublesome questions of distinguishing outright copying from reverse engineering and of "second source" supply were waved away: witnesses assured the House subcommittee that legitimate reverse engineering left a "very big paper trail that cannot reasonably be fabricated."[163] In contrast, the "pirate has no such papers, for the pirate does none of this work."[164] Legitimate reverse engineering would also result in a new version of the original chip, "functionally equivalent . . . but [with] different visual patterns on it."[165] Even with second source production, where the second supplier wanted a chip "so fungible with the first chip from a production standpoint that it would not make any difference which one was placed into the equipment for which the chip is targeted," leading to "similarities in layout and appearance," it was nonetheless "reasonably easy to tell the difference between a slavish copy and a reverse engineering job."[166] These confident statements turned out to be completely wrong; the existence or lack of a paper trail provided no indicator of whether a firm had engaged in protected reverse engineering or prohibited copying.[167] Politically, the industry was trying to elude a problem it had previously identified as Sisyphean by arguing that they had, in fact, found a way to balance the rock at the top of the hill, between reverse engineering on one side and infringement on the other.

Over time, the semiconductor industry altered the substance of its proposed legislation to solidify a coalition in favor of it. As described below, however, these changes sapped the SCPA of its vitality, giving the industry a Pyrrhic victory.

3. Why the SCPA Failed

Overall, it is difficult to assess the SCPA as anything other than a failure. Semiconductor manufacturers submitted few registrations for their designs,

160. 17 U.S.C. § 906(a); *see* Rauch *supra* note 127, at 437.
161. 17 U.S.C. § 907.
162. 1983 SCPA Hearing, *supra* note 70, at 175.
163. *Id.* at 36 (quoting Intel's corporate counsel).
164. *Id.* at 37 (quoting letter from Intel Senior Vice President Leslie Vadasz).
165. *Id.* at 27–28 (statement of Intel's corporate counsel).
166. *Id.* at 146 (statement of Intel senior vice president).
167. *See* Rauch, *supra* note127, at 435–36.

and there are but two final decisions of SCPA-based claims in litigation. The first case, *Brooktree Corp. v. Advanced Micro Devices* (better known as AMD), dealt with alleged infringement by AMD of two mask works registered in 1987 and 1988.[168] AMD unsuccessfully argued the accused chips resulted from lawful reverse engineering, but the jury rejected that defense and the Federal Circuit affirmed the jury's decision.[169] The case's extensive jousting over the SCPA and reverse engineering was largely superfluous: AMD was also found liable for willfully infringing three Brooktree patents,[170] and the parties agreed that the SCPA damages violation overlapped entirely with the patent ones.[171] The second case, *Altera Corp. v. Clear Logic Inc.*, was also a successful action for SCPA infringement, and resulted in damages of more than $36 million.[172] In 2005, with only *Brooktree* as persuasive guidance, the Ninth Circuit grappled with the copyright-like question of defining the pertinent level of abstraction to analyze whether the accused chip was substantially similar to the protected one.[173] The court held that only "ideas that are physically expressed in the mask work" could be protected under the SCPA.[174] It affirmed that Clear Logic had infringed Altera's mask works.[175]

Although there was no SCPA litigation after 2005, the Act continued to draw registrations for mask works for a time, although both the absolute and relative (to all copyright registrations issued) numbers are tiny. A study of all copyright registrations from 2008 to 2012, totaling over 2.3 million, found only 1026 mask work registrations, or roughly .04% of the overall number.[176] Even this figure diminished rapidly. The last reported mask work registration was in 2019.[177] In 2018, there were fifty-two registrations.[178] In 2017, there were

168. 977 F.2d 1555, 1563 (Fed. Cir. 1992).

169. *Id.* at 1565–70. The *Brooktree* decision has been criticized based on the extensive evidence AMD presented regarding reverse engineering. *See* Rauch, *supra* note 127, at 436–37.

170. *Brooktree*, 977 F.2d at 1561, 1570, 1581.

171. *Id.* at 1578. If anything, the SCPA liability presented less risk on damages than patent infringement, since the SCPA has no enhanced damages while the Patent Act authorizes up to treble damages for willful infringement. *See id.* at 1581; 35 U.S.C. § 284.

172. 424 F.3d 1079, 1083 (9th Cir. 2005).

173. *Id.* at 1084–86.

174. *Id.* at 1086.

175. *Id.* at 1081–82.

176. Oliar, Pattison, & Powell, *supra* note 14, at 2224.

177. LED driver chip (ORG6611), Reg. No. MW0000019773 (2019).

178. Search performed on Public Catalog of U.S. Copyright Office using command keyword "MW?" (July 15, 2022).

three.[179] 2016 had seventy-six.[180] 2015 had thirty-seven.[181] While the absolute figures are noisy, they are also minuscule.

There are three interrelated reasons for the SCPA's obsolescence. The first is that technological progress was kind to chipmakers, but not the legislation. Gordon Moore's famous prediction in 1965 that the number of transistors in an integrated circuit of a given size doubles every two years (which he renewed in 1975) proved correct.[182] Moore foresaw a chip capable of 65,000 transistors by 1975.[183] By comparison, in 2021 IBM debuted a semiconductor chip with two-process ("2nm") transistors (the industry standard was then seven-process, or "7nm"), giving it a chip with fifty billion transistors.[184] At that density, there is no benefit either to piracy or to reverse engineering—both are slower and more expensive than simply designing one's own semiconductor layout. And, the increasing customization of chip to product means that copying, even if economically feasible, would not be much help to a competitor.[185] This pattern is a remarkable reversal of the usual relationship between technology and IP, which is that technological advances make copying cheaper.[186] Changes in IP rights often seek to counteract this trend. Here, technological progress made copying harder because the underlying innovation became more complex.[187] This argues against the need for customized IP protection for semiconductors: the SCPA generated social costs for little if any benefit in increased output.

The second reason was resilience in production and design—an underdiscussed factor in the scholarly literature on the SCPA that bears on the rate of innovation in semiconductors at least in the late 1970s.[188] Exclusive rights over a design could affirmatively disadvantage a semiconductor producer because many procurement contracts (including government ones)

179. *Id.*

180. *Id*,

181. *Id.*

182. *See* Gordon E. Moore, *Cramming More Components onto Integrated Circuits*, 86 PROCEEDINGS OF THE IEEE 82, 82 (1998).

183. *Id.*

184. Michael Irving, *IBM's New 2-Nm Chips Have Transistors Smaller Than a Strand Of DNA*, NEW ATLAS (May 6, 2021), https://newatlas.com/computers/ibm-2-nm-chips-transistors/; IEEE, INTERNATIONAL ROADMAP FOR DEVICES AND SYSTEMS 7 (2021), https://irds.ieee.org/images/files/pdf/2021/2021IRDS_MM.pdf.

185. *See How Technology Made a Copyright Law Obsolete*, JDSUPRA (Sept. 14, 2018), https://www.jdsupra.com/legalnews/how-technology-made-a-copyright-law-75048/.

186. *See* Mark A. Lemley, *IP In a World Without Scarcity*, 90 N.Y.U. L. REV. 460, 461–65 (2015).

187. *See* Rauch, *supra* note 127, at 428–29.

188. 1979 SCPA Hearing, *supra* note 1, at 52 (quoting January 1977 FTC staff report on importance of second sourcing and "rapid copying").

required that a chip be available from multiple sources, a practice known as "second sourcing."[189] As Texas Instruments noted during the 1979 hearings, "OEM's (original equipment manufacturers) and the Department of Defense generally refuse to design SC [semiconductor] products into their equipment unless there are multiple sources."[190] The reason for the hedge is obvious: if the primary supplier encounters difficulties, the downstream consumer, such as the Department of Defense, has a fallback option.[191] The path to independence lay through unauthorized copying, and in particular reverse engineering, that enabled each vendor to build out its own production lines.[192]

The last and most important reason the SCPA failed derives from the history of its creation. The industry unity described above, in the face of the "specter of formidable foreign competition,"[193] was achieved at the price of efficacy. Narrowing semiconductor chip protections to exclude reverse engineering and immunize innocent infringement brought copyists and creators together, but by focusing protection on the process—decompiling a mask work and then reproducing it in chip form—rather than the product, the SCPA failed to address the innovation already occurring in 1983. The industry succeeded in passing a bill whose protections were limited from the start and quickly became worthless.

B. AUDIO HOME RECORDING ACT (AHRA) OF 1992

1. How the AHRA Functions

The basic technological rules of the AHRA seem straightforward: it prohibits the importation,[194] manufacture, or distribution of a digital audio

189. *Id.* at 51 (Finch testimony citing FTC study).

190. *Id.* at 78 (statement of George Heilmeier, Vice President, Texas Instruments).

191. *Id.* at 52 (noting industry requirements for "identity of form, fit and function between the original article and the second sourced article.").

192. Technological advances in chip complexity and specialization pose major challenges for this type of resilience requirement. Intel, for example, bundles 47 different chips together as a single technology. Don Clark, *The Huge Endeavor to Produce a Tiny Microchip*, N.Y. TIMES (Apr. 8, 2022), https://www.nytimes.com/2022/04/08/technology/intel-chip-shortage.html. The COVID-19 outbreak demonstrated the fragility of chip supply lines. *See* Ana Swanson & Catie Edmondson, *Commerce Dept. Survey Uncovers 'Alarming' Chip Shortages*, N.Y. TIMES (Jan. 25, 2022), https://www.nytimes.com/2022/01/25/business/economy/chips-semiconductors-shortage.html.

193. 1983 SCPA Hearing, *supra* note 70, at 440 (quoting John Craig Oxman, *Intellectual Property Protection and Integrated Circuit Masks*, 29 JURIMETRICS 165 (1987)).

194. Importation is listed first in the set of prohibited conduct, which may indicate the chief concern of the AHRA. *Compare* 17 U.S.C. §§ 106 (listing exclusive rights of copyright owner) *and* 602(a) (1) (listing importation without copyright owner's authorization as separate category of distribution right under § 106).

recording device[195] or digital audio interface device[196] that does not implement specified mechanisms for preventing serial copying.[197] The principal mechanism contemplated by the AHRA is the Serial Copy Management System (SCMS),[198] although the legislation also makes room for functionally equivalent systems[199] or ones certified by the Department of Commerce as prohibiting unauthorized serial copying.[200] The goal of the SCMS is to prevent digital audio recorders from "recording 'second-generation' digital copies from 'first-generation' digital copies containing audio material over which copyright has been asserted via SCMS."[201] Congress helpfully supplied a lengthy technical reference document describing the specifications for implementing SCMS, which was otherwise undefined in the legislation.[202] To prevent workarounds, the AHRA bans the importation, manufacture, or distribution of a device, or the offering of a service, or the performance of a service, with the primary purpose or effect of circumventing the SCMS or its equivalent.[203]

The financial side of the AHRA is complex, although complexity may have been a necessary evil.[204] After all, earlier versions of the bill had been torpedoed because songwriters and music publishers were left out of the revenue stream.[205] The Act creates royalty payments to music interests from duties levied upon digital audio recording devices or digital audio recording media[206] distributed in the United States.[207] Formally, the payments were imposed on both imported and domestically manufactured devices and media; informally, all concerned were clear that the target was Japanese firms.[208] Initial

195. *See* 17 U.S.C. § 1001(3).
196. *See* 17 U.S.C. § 1001(2).
197. *See* 17 U.S.C. § 1002(a).
198. 17 U.S.C. § 1002(a)(1).
199. 17 U.S.C. § 1002(a)(2).
200. 17 U.S.C. § 1002(a)(3).
201. *Technical Reference Document for the Audio Home Recording Act of 1991*, 138 CONG. REC. 9029, 9043 (1992).
202. *Id.*
203. 17 U.S.C. § 1002(c).
204. *See* 17 U.S.C. §§ 1006, 1007.
205. In theory, royalties compensated all parties with an interest in sound recordings or musical works for the harm caused by first-generation copying permitted under the AHRA. *See* 17 U.S.C. § 1008; Hearings Before the Subcomm. on Intellectual Property and Judicial Administration of the House Comm. on the Judiciary, 102nd Cong. 66 (1992) [hereinafter 1992 AHRA Hearing] (statement of Michael Kirk, Assistant Commissioner for External Affairs, U.S. Patent and Trademark Office).
206. *See* 17 U.S.C. § 1001(4).
207. 17 U.S.C. § 1003(a).
208. *See* 1992 AHRA Hearing, *supra* note 205, at 68 (describing the "producers of recording equipment (predominantly Japanese)" in Manbeck statement).

distributors must file notices, along with quarterly and annual accounting statements, with the Register of Copyrights.[209] For devices, the levy is 2%[210] of the transfer price,[211] subject to statutory maxima, with flexibility for Copyright Royalty Judges (CRJs) to increase those upper bounds.[212] For media, the duty is 3%.[213] To obtain their share of accumulated royalties, interested copyright parties[214] file claims with the CRJs in January or February to cover the preceding year.[215] These parties include anyone whose musical work or sound recording was distributed or disseminated via transmission.[216] Overall, royalties are divided into two tranches: one-third goes to the Musical Works Fund, and two-thirds to the Sound Recordings Fund.[217] The AHRA carefully subdivides each fund and encourages voluntary agreements among interested copyright parties on distributions.[218] It also provides a set of remedies for infringement that largely track the broader Copyright Act's provisions,[219] and puts in place administrative procedures for determining, in advance, whether a digital audio recording device or digital audio interface device would be required to implement protections against serial copying or to make royalty payments.[220]

The AHRA creates two legal safe harbors. The first protects entities that manufacture, import, or distribute devices or media compliant with the Act's provisions.[221] This, of course, was the manufacturers' half of the SCMS bargain. DAT providers or vendors gained a shield against contributory infringement or other copyright claims if they implemented authorized

209. 17 U.S.C. §§ 1003(b)–(c).

210. 17 U.S.C. § 1004(a)(1).

211. *Id.*

212. 17 U.S.C. § 1004(a)(3); *see* 17 U.S.C. § 801(b)(1) (authorizing Section 1004 determinations). Copyright Royalty Judges are three administrative judges appointed by the Librarian of Congress. 17 U.S.C. § 801(a).

213. 17 U.S.C. § 1004(b).

214. *See* 17 U.S.C. § 1001(7). The definition carefully includes the various copyright interests affected, or potentially affected, by copying of sound recordings. *See id.*; *see* 1992 House AHRA Hearing at 68–69.

215. 17 U.S.C. § 1007(a)(1).

216. 17 U.S.C. § 1006(a)(1); *see* Gary S. Lutzker, Note, *Dat's All Folks:* Cahn v. Sony *and the Audio Home Recording Act of 1991 – Merrie Melodies or Looney Tunes?*, 11 CARDOZO ARTS & ENTM'T L.J. 145, 173–74 (internal citations omitted).

217. 17 U.S.C. § 1006(b).

218. 17 U.S.C. §§ 1006(b)(1) (Sound Recordings Fund); 1006(b)(2)(B) (Musical Works Fund).

219. 17 U.S.C. § 1009; *compare* 17 U.S.C. §§ 502–505 (civil remedies) *with* 506 (criminal).

220. 17 U.S.C. § 1010.

221. 17 U.S.C. § 1008.

measures against serial copying.[222] The second safe harbor immunizes consumers who engage in non-commercial use of such devices or media to make digital or analog musical recordings.[223] The consumer safe harbor had the salutary effects of legalizing ubiquitous conduct that the music industry could not realistically prevent, along with conferring at least some benefit to those who indirectly pay the levies funding the AHRA's royalty system.[224]

The AHRA looked like a certain success story—a reasoned compromise among a diverse set of interests.[225] Each major interest group had been placated, if not satisfied, by the law's creation of a technological middle ground and of a revenue fund split among the players.[226] Government estimates projected $188 million in royalties from that pool in the first two years after the statute's enactment.[227] All parties gained greater legal certainty and thereby likely avoided litigation costs of the sort that Sony incurred.[228] The strong consensus from observers was that the legislation was "a historic compromise, and predicted that great benefits to both the public and to industry would flow from it."[229] The AHRA's provisions were lauded as a model that could be adapted to address similar copyright infringement issues, such as unauthorized duplication of personal computer software by consumers.[230] The Act seemed to have a bright future.

2. The Genesis of the AHRA

The Audio Home Recording Act, passed in 1992 after years of legal and political combat between the music industry and the home entertainment equipment industry, sought to manage the transition from an analog world of music to a digital one. It failed, setting the stage for MP3 files, Napster, and the peer-to-peer wars.

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222. *See* 1992 House AHRA Hearing at 1.

223. 17 U.S.C. § 1008.

224. 1992 House AHRA Hearing at 1–2.

225. *See, e.g.*, Monica Zhang, Note, *"Fair Compensation" in the Digital Age: Realigning the Audio Home Recording Act*, 38 HASTINGS COMM. & ENTM'T L.J. 145, 147–48 (2016).

226. *See* Peter S. Menell & David Nimmer, *Legal Realism in Action: Indirect Copyright Liability's Continuing Tort Framework and* Sony's *De Facto Demise*, 55 UCLA L. REV. 143, 162–63 (2007); Lutzker, *supra* note 216, at 180–81.

227. *See* Christine C. Carlisle, Comment, *The Audio Home Recording Act of 1992*, 1 J. INTELL. PROP. L. 335, 337 (1994).

228. *See* Ben Depoorter, *Technology and Uncertainty: The Shaping Effect on Copyright Law*, 157 U. PA. L. REV. 1831, 1846–49 (2009) (describing effects of legal uncertainty in copyright).

229. Lutzker, *supra* note 216, at 186.

230. *See* David M. Hornik, Recent Development, *Combating Software Piracy: The Softlifting Solution*, 7 HARV. J.L. & TECH. 377, 406 (1994).

The 1980s found the music industry in a state of anxiety about unauthorized copying. Sometimes, the claims were hyperbolic: the industry warned that the advent of "copyright killer machines"[231]—dual-cassette tape recorders—placed its creative endeavors at risk.[232] However, music executives could not provide any evidence of actual harm,[233] and Congress (fortified by the lobbying of the consumer electronics industry) declined to ban audio taping equipment or levy a tax upon it that would go to music labels.[234] The industry survived.

However, change was on the horizon: the coming transition from analog to digital music, along with shifts in copyright law protecting consumer copying, seemed poised to disrupt how music was recorded and consumed. The compact disc (CD) debuted in 1982. For consumers, it was initially a read-only medium, but one that offered considerable advantages over analog: greater storage capacity, a more durable medium, and the ability to hold information such as a song's title and length internally rather than on liner notes or a label. Equipment makers slowly began experimenting with creating machines capable of writing or recording music to CDs, not merely playing them. In 1984, in *Sony Corp. of America v. Universal City Studios*, the U.S. Supreme Court narrowly found that non-commercial home recording of copyrighted television broadcasts for the purpose of time-shifting constituted fair use.[235] Private home taping of copyrighted music similarly seemed likely to be exempt from liability.

The music industry recognized the potential threat driven by the digital and fair use revolutions. Nascent digital audio tape (DAT) technology seemed to embody their worst fears: unlike CDs at the time, DATs were a read-write medium, and while they still employed magnetic tape to store data, they could do so at a much greater density than standard cassettes (and even, with some DAT formats, CDs), enabling consumers to enjoy higher-quality recordings. DATs had already been in use for professional creation and duplication of

231. Menell & Nimmer, *supra* note 226, at 189 (quoting the president of the Recording Industry Association of America).

232. *Id.* at 188–89 (quoting Alan Greenspan, then chief economic consultant to the music industry).

233. *See id.* at 160–61.

234. Congress did pass legislation partially exempting sound recordings from copyright's first sale doctrine. *See* Record Rental Amendment of 1984, Pub. L. No. 98-450, 98 STAT. 1727 (Oct. 4, 1984) (codified at 17 U.S.C. §§ 109, 115); Ryan G. Vacca, *Expanding Preferential Treatment Under the Record Rental Amendment Beyond the Music Industry*, 11 LEWIS & CLARK L. REV. 605, 612–13 (2007)

235. Sony Corp. of Am. v. Universal City Studios, 464 U.S. 417 (1984); *see* Jessica Litman, *The Story of Sony v. Universal Studios: Mary Poppins Meets the Boston Strangler*, *in* INTELLECTUAL PROPERTY STORIES 358 (Jane C. Ginsburg & Rochelle C. Dreyfuss, eds., 2006 ed.).

sound recordings, but subsequently emerged as a viable option for ordinary users in the mid-1980s when Sony announced plans to introduce consumer-oriented DAT products.[236] Having consumers with the capability to produce a large number of high-quality duplicates of sound recordings scared the industry, which turned its sights on DAT equipment.

At first, the music industry employed informal tactics: threats of litigation, lobbying for bans on the importation of DAT machines, political pressure framed around trade deficits with Japan (where the initial DAT equipment was produced), and a simple refusal to release albums in the new format.[237] The industry's rhetoric about trade had more than a tinge of racism and nativism. In this, they followed the lead of the motion picture industry, whose chief lobbyist, Jack Valenti, had long deployed blatantly anti-Japanese tropes to serve his clients' ends.[238]

DAT manufacturers initially declined to import the new equipment over concerns about political optics and some worries about litigation, although the 1984 *Sony* decision by the U.S. Supreme Court provided a significant bulwark against any real liability risk. The battle over the digital-to-audio transition was truly joined when a lyricist and several music publishers filed suit against Sony, claiming that the manufacture and distribution of DAT equipment constituted contributory infringement.[239] Their legal claims were weak, but Sony settled quickly, agreeing to impose technological controls on its DAT equipment to prevent consumers from making copies of copies of sound recordings (although first-generation copies were permitted) and to support the codification of this arrangement in the Copyright Act. Sony's approach has mystified commentators, particularly given the company's previous success before the Supreme Court on nearly identical copyright issues. The key development, though, was Sony's acquisition of CBS Records, a major music label, in 1987.[240] The purchase meant that Sony now had an interest in both sides, as content creator and also equipment manufacturer.

The *Sony* settlement with the lyricist and music publishers provided the framework for larger resolution of the technological and economic issues that DAT equipment and the digital transition raised. Importantly, the settlement also solidified the music industry's stance opposing unrestricted DAT

236. Lutzker, *supra* note 216 at 172.

237. *See* Bill D. Herman, *A Political History of DRM and Related Copyright Debates, 1987-2012*, 14 YALE J.L. & TECH. 162, 170–71 (2012).

238. *See* WILLIAM PATRY, MORAL PANICS AND THE COPYRIGHT WARS 146–48 (2009).

239. Cahn v. Sony Corp., No. 90 Civ. 4537 (S.D.N.Y. July 11, 1991).

240. *See* Peter S. Menell, *Envisioning Copyright Law's Digital Future*, 46 N.Y.L. SCH. L. REV. 63, 130–31 (2003); Carlisle, *supra* note 227, at 350–51.

technology. The legislation that evolved into the AHRA required time-consuming and complex coalition building. The first major initiative would have limited the ability of end users to make copies of pre-recorded music via a set of technological controls permitting first-generation copying (from an original authorized recording) but not second-generation (from a copy).[241] The record labels and audio equipment manufacturers were content with this bargain: consumers wanted access to DAT products that manufacturers sought to introduce. The labels were canny enough to recognize that unauthorized home taping generated sales of their albums.[242] At least sometimes, consumers were happy to buy after being able to try a new artist or album. As one AHRA critic memorably put it, "the music industry likes a little piracy, but not too much."[243] Indeed, despite repeated, vivid descriptions of the dramatic harms[244] that home taping inflicted,[245] the music industry was generally content to live with first-generation copying, especially since some advocacy groups claimed that nearly all home taping was of exactly that sort.[246] In addition, formats like DAT were technologically less demanding for the labels, since they did not need to capture as much data to produce high-quality sound.[247]

241. *See* Lutzker, *supra* note 216, at 173–74.

242. A 1989 study by the U.S. Office of Technology Assessment [hereinafter 1989 OTA Study] "found that about one-quarter of pre-recorded music purchases were made after the consumer first heard the artist or recording on a home-made tape." 1992 House AHRA Hearing at 100 (written statement of Frank Beacham).

243. 1992 House AHRA Hearing at 100 (written statement of Frank Beacham).

244. Industry representatives relied principally on three empirical claims. First, that unauthorized home taping copied over one billion pieces of music each year. 1992 House AHRA Hearing at 88 (statement of Jason Berman, President, Recording Industry Association of America (citing 1989 OTA Study)). Second, such copying deprived the music industry of, at minimum, $1 billion annually. 1992 House AHRA Hearing at 88; *see* 1992 House AHRA Hearing at 88 at 112 (letter from Berman to Rep. Cardiss Collins, Mar. 17, 1992 (citing figures of $1.5–1.9 billion)). Third, this taping displaced one-third of legitimate sales of pre-recorded music. *See* 1992 Senate AHRA Hearing at 114 (Berman statement). More objective sources, such as the U.S Patent and Trademark Office, questioned these assertions, noting that the USPTO did not possess any empirical data on the effects of private copying and that industry had not revealed any. *See* 1992 House AHRA Hearing at 128 (written statement of Harry Manbeck, Jr., Assistant Secretary of Commerce and Commissioner of Patents and Trademarks).

245. *See* 1992 House AHRA Hearing at 88 (Berman statement); *id.* at 112 (letter from Berman to Rep. Cardiss Collins, Mar. 17, 1992); 1992 Senate AHRA Hearing at 114 (Berman statement); *but see* 1992 House AHRA Hearing at 128 (Manbeck written statement).

246. *See* 1992 House AHRA Hearing at 117 (written statement of Gary Shapiro, Group Vice President, Electronic Industries Association, and Chairman, Home Recording Rights Coalition (adding that "[c]opying from copies is an infrequent exception" to this pattern)).

247. *See id.* at 81 (written statement of John Roach, Chairman, Tandy Corp.).

This alliance left out two groups, one politically potent, the other weak as a lobbying force but vital as an economic one. The first group comprised songwriter interests; performing rights organizations that operated on their behalf; and music publishers who distributed print versions of the relevant compositions.[248] Their position was straightforward: technological measures preventing consumers from making copies of copies might protect record label interests but would not address the lost revenue to songwriters from first-generation piracy. After the litigation between Sony and songwriters settled, the music and audio equipment representatives returned to negotiations, this time with songwriters included, and produced a compromise that added a royalty system to the technological precautions. Thus mollified, songwriters joined in the chorus of support for the bills that became the AHRA.

Consumers were left out of the AHRA negotiations, partly because it proved impossible to settle upon a suitable representative for their interests, and partly because they were unlikely to be pleased by the draft legislation. It would, after all, constrain home taping at least somewhat, without a clear offsetting benefit. For the former point, Congress theoretically represents citizen interests, including on IP policy.[249] However, this is the point of public choice theory: only a few dedicated audiophiles or activists might be expected to champion the cause of their peers, while the various industry groups had a sufficient pecuniary interest to invest in organizing and lobbying. In the 1992 hearings on the AHRA draft, consumer interests were represented (at least partially) by two witnesses: a freelance journalist, in both the House and Senate hearings,[250] and an MIT researcher in the Senate one.[251] Both faced skeptical questioning from the senators or representatives in attendance, who were dubious about any arguments that might undercut the carefully negotiated bargain now supported by a seemingly unified set of affected industries.[252]

For the latter point, a 1988 survey by the U.S. Office of Technology Assessment showed that consumers were strongly opposed to changes in copyright law that either limited their ability to engage in (unauthorized) reproduction of content or that imposed fees upon them, such as via a royalty

248. *See id.* at 69 (Manbeck statement).

249. *See* Litman, *supra* note 34, at 314 (noting that the "public, of course, does have a designated representative; acting as that representative is Congress' job description").

250. *See* 1992 House AHRA Hearing at 96–100 (Beacham statement).

251. *See* 1992 Senate AHRA Hearing at 127–54 (statement of Philip Greenspun); *id.* at 155–59 (Beacham statement). Although the Home Recording Rights Coalition purported to advance consumer interests, it did so instrumentally to advocate for equipment manufacturers.

252. *See id.* at 160–64; 1992 House AHRA Hearing at 100–06; *id.* at 68 (listing entities supporting the AHRA).

scheme.[253] The AHRA, as described below, imposed levies upon digital audio recorders and media that were virtually certain to be paid by consumers through higher retail prices, although the Recording Industry Association of America (RIAA, which represented music labels) repeatedly dissembled on this point.[254] Industry representatives and legislators alike pointed to two purported advantages of the AHRA for consumers. First, it expressly immunized consumers from liability for non-commercial private copying of sound recordings, whether digital or analog.[255] Second, the provisions protecting equipment manufacturers from liability for contributory infringement would enable electronics firms to produce and distribute next-generation audio technology to consumers, who could enjoy its purportedly superior sound, random access capabilities, and greater storage. This latter point proved to be a minimal benefit at best. Consumers simply ignored DATs and their kin in favor of continued loyalty to audiocassettes, a transition to compact discs, and, before long, the shift to music shared over (then) high-speed computer networks in the form of MP3 files. The AHRA planned for an audiophile party that, ultimately, few attended. It did, however, help set the stage for the much more dangerous phenomenon of file sharing networks.

At first blush, though, the AHRA seemed to have something for everyone, setting the stage for the transition to digital taping of sound recordings.

3. Why the AHRA Failed

And yet, the AHRA flopped because DATs failed to attract consumers. In 2012, the royalty fund distributed just $5.5 million to 200,000 claimants. The two principal reasons for the Act's striking lack of success are illustrative.

The first reason for the AHRA's failure is that the law addressed only systems involving digital cassettes such as DATs. The music industry had regretfully surrendered on analog copying, and did not anticipate the technological and social shift from specialized equipment for creating, distributing, and listening to music (such as DATs or single-purpose CD players) to general-purpose computers equipped with CD drives that could record to blank compact discs.[256] The lack of technological foresight is

253. *See id.* at 106 (statement of Rep. Collins).

254. *See id.* at 111 (Berman statement). "Lied" might be more accurate. Although the royalties imposed by the legislation were not high in absolute terms, they were universal. *See* 1992 Senate AHRA Hearing at 105 (question by Rep. Collins, "[a]ssuming that the entire royalty is passed on to consumers"); *id.* at 2 (noting consumer "burdens [from] having to indirectly pay royalties.").

255. 17 U.S.C. § 1008.

256. *See* Herman, *supra* note 237; Depoorter, *supra* note 228, at 1840.

understandable: experts famously doubted personal computers, laptops, cell phones, and the internet, among other products and services.[257]

The music industry also failed to understand its customers—a mistake they would repeat with the advents of the MP3 player[258] (which was, ironically, attacked as violating the AHRA) and streaming services.[259] As Terry Fisher explains in his book *Promises to Keep*, the creation and consumption of music has always been a social practice.[260] A cogent modern example is the mixtape (now, perhaps, superseded by the streaming playlist). Sharing one's musical preferences with another person, or offering a curated selection of songs to them, is a profound form of social connection.[261] While the AHRA eventually and grudgingly offered consumers some capability to engage in this practice, so long as the starting material was an authorized phonorecord, the music industry spent the better part of a decade fighting a pitched battle against DAT technologies with any copying capacity whatsoever. The delay pushed consumers to other, already available digital media. And while the statute immunized non-commercial creation or duplication of a musical work, it did not protect the subsequent distribution of a mixtape DAT.[262] One could lawfully make a DAT of love songs for a summer crush, but sending it to them might trigger copyright liability. For a period, then, consumers did not have a lawful option for interacting with digital music in the manner they had become accustomed to with analog music.

Soon, though, music consumers found a digital option for duplicating and sharing sound recordings, one produced by an interest group that outgunned even Hollywood: the personal computer, equipped with a CD drive capable of both reading and writing data. When compact discs debuted, personal computers were increasingly ubiquitous in homes, but storage devices such as

257. *See, e.g.*, David Emery, *Did Paul Krugman Say the Internet's Effect on the World Economy Would Be 'No Greater Than the Fax Machine's*?, SNOPES (June 7, 2018), https://www.snopes.com/fact-check/paul-krugman-internets-effect-economy/; Will Oremus, *Forty Years Ago Today, Snarky Tech Journalists Made Fun of the First Cellphone*, SLATE (Apr. 3, 2013), https://slate.com/technology/2013/04/cellphones-40th-birthday-skeptics-made-fun-of-first-mobile-phone.html.

258. Recording Indus. Ass'n of Am. v. Diamond Multimedia Sys., 180 F.3d 1072 (9th Cir. 1999).

259. *See* Flo & Eddie, Inc. v. Sirius XM Radio, 9 F.4th 1167 (9th Cir. 2021).

260. *See generally* WILLIAM W. FISHER III, PROMISES TO KEEP (2006).

261. *See* Nicholas Suzor, *Access, Progress, and Fairness: Rethinking Exclusivity in Copyright*, 15 VAND. J. ENTM'T & TECH. L. 297, 317–18 (2013); Andee Tagle, *The Enduring Romance of Mixtapes*, ATLANTIC (Feb. 13, 2023), https://www.theatlantic.com/family/archive/2023/02/mixtape-valentines-day-gift/673018/.

262. *See* 17 U.S.C. § 1008.

hard drives were small, slow, and expensive.[263] Each of these challenges diminished rapidly as manufacturers packed more sectors into drives that spun faster and featured more heads for reading and writing data. Facing the PC as a consumer music device, the music industry was confronted with at least two disadvantages. The first disadvantage was that both compact discs and hard drives were significantly more durable and reliable than the magnetic tape in DATs; record labels could not count on consumers having to replace music stored on them with any regularity.[264]

The second and much weightier disadvantage was that PCs involved a largely new set of interest groups, from manufacturers to operating system developers to gamers.[265] Some, such as software producers, had overlapping interests with the music industry, since they too feared unconstrained copying of their works. But others did not, and the computer industry already wielded enough political power in the early 1990s to block the AHRA from treading on its products.[266] For example, the Act's definition of the term "digital musical recording" expressly excludes "a material object . . . in which one or more computer programs are fixed."[267] Similarly, the term "digital audio recording medium" does not include "any material object . . . that is primarily marketed and most commonly used by consumers . . . for the purpose of making copies of nonmusical literary works, including computer programs or data bases."[268] And the term "digital audio recording device" covered machines or devices "the digital recording function of which is designed or marketed for the primary purpose of . . . making a digital audio copied recording for private use."[269] With PCs, of course, digital recording was but one of many purposes. These definitional limitations protected a portable digital music player, and by extension computer hardware and software firms, in the only major litigation over the AHRA.[270]

When the music industry sued to block distribution of the first popular portable MP3 player, the Diamond Rio, the Ninth Circuit was candid about

263. *See Amazing Facts and Figures About the Evolution of Hard Disk Drives*, SOLARWINDS PINGDOM (July 10, 2019), https://www.pingdom.com/blog/amazing-facts-and-figures-about-the-evolution-of-hard-disk-drives/.

264. *See generally* Frank Beacham, *Archivists Warn: Don't Depend on Digital Tape*, MINIDISC.ORG, http://www.minidisc.org/dat_archiving.html (last accessed Feb. 2, 2024).

265. *See* Hornik, *supra* note 230, at 173–74.

266. *See* 17 U.S.C. § 1002(a) (limiting imposition of copying controls to digital audio recording devices and digital audio interface devices); § 1001.

267. 17 U.S.C. § 1001(5)(B)(ii).

268. 17 U.S.C. § 1001(4)(B)(ii).

269. 17 U.S.C. § 1001(3).

270. Recording Indus. Ass'n of Am. v. Diamond Multimedia Sys., 180 F.3d 1072 (9th Cir. 1999).

the implications of the statutory language described above. It agreed with the district court's observation that

> the exemption of hard drives from the definition of digital music recording, and the exemption of computers generally from the Act's ambit, "would effectively eviscerate the [Act]" because "any recording device could evade [ ] regulation simply by passing the music through a computer and ensuring that the MP3 file resided momentarily on the hard drive."[271]

"While this may be true," the appellate court observed, "the Act seems to have been expressly designed to create this loophole."[272] Indeed: the loophole was the price of the computer industry's acquiescence to the AHRA.

The second reason for the AHRA's failure was that the seemingly monolithic music industry was far less unified in reality. The complexity of copyright interests in sound recordings and of business practices in the industry created subtle but important fracture points. Resolution of the Sony lawsuit brought songwriter interests on board, but at the price of further delay in access to DATs and higher costs to consumers. The pause was long enough for computers to displace specialized audio home equipment, and for consumers to learn to copy CDs and then rip the songs on them to MP3 files, which could be shared on the nascent Information Superhighway of the internet.

The DAT has been consigned to the ash heap of history, and the AHRA has fared little better. The music industry has rarely litigated using the statute, and when it has, the purpose has usually been to re-fight old battles over copying sound recordings by claiming that a new technology fails to comply with the AHRA. These claims have not worked. The best-known case, as mentioned above, was the RIAA's suit over the Diamond Rio MP3 player, one of the first and most popular portable music players that led to the iPod and, in time, to nearly all mobile phones offering this capability.[273] The RIAA's claim rested ultimately on whether a computer hard drive, from which the Diamond Rio copied sound recordings via a cable, qualified as a "digital music recording" under the statute.[274] On appeal, the Ninth Circuit held that it did not, since the term expressly excluded material objects in which a computer program was fixed.[275] And, the Rio was not liable because it was incapable of

271. *Id.* at 1078 (internal citation omitted).
272. *Id.*
273. Recording Indus. Ass'n of Am. v. Diamond Multimedia Sys., 180 F.3d 1072 (9th Cir. 1999).
274. *Id.* at 1076–79.
275. *Id.*

indirectly reproducing a digital music recording from a transmission—it could only copy such a recording from a file stored on a hard drive.[276] As such, the Diamond Rio did not fall within the AHRA's ambit and hence did not have to include a copy control system.

Subsequent lawsuits against automobile manufacturers and their suppliers based on car models containing software capable of copying music from a CD to an in-car hard drive also failed.[277] The statute has appeared briefly in other litigation: Napster[278] and Aimster[279] unsuccessfully attempted to defend themselves from the blizzard of copyright claims that ultimately drove the companies out of the market based on users' ability to make non-commercial recordings under the statute; a manufacturer of karaoke machines could not avoid liability for displaying lyrics on a video screen while the machine played the relevant song on the theory that Congress, if it were to revisit the AHRA, would immunize this conduct;[280] and XM Satellite Radio was not liable under the statute for distributing digital audio recording devices, but that immunity did not extend to other allegedly infringing conduct.[281]

The AHRA has been tested relatively rarely because it is almost completely irrelevant to the current state of copyright technology. The music industry won unanimous support at the cost of technological obsolescence.

C. VESSEL HULL DESIGN PROTECTION ACT OF 1998

1. How the VHDPA Functions

The VHDPA protects original[282] designs of useful articles that make the article attractive or distinctive in appearance to the relevant public.[283] That language makes the Act seem broader than it actually is: useful articles are limited to "a vessel[284] hull . . .[285] or deck,[286] including a plug[287] or mold,"[288]

276. *Id.* at 1079–81.

277. Alliance of Artists & Recording Cos. v. DENSO Int'l Am., 947 F.3d 849 (D.C. Cir. 2020); Alliance of Artists & Recording Cos. v. GM Co., 162 F. Supp. 3d 8 (D.D.C. 2016).

278. A&M Records, Inc. v. Napster, Inc., 239 F.3d 1004, 1024–25 (9th Cir. 2001).

279. *In re* Aimster Copyright Litigation, 252 F. Supp. 2d 634, 648–49 (N.D. Ill. 2002); *aff'd*, 334 F.3d 643 (7th Cir. 2003).

280. ABKCO Music, Inc. v. Stellar Records, Inc., 96 F.3d 60 (2d Cir. 1996).

281. Atl. Recording Corp. v. XM Satellite Radio, Inc., 81 U.S.P.Q. 2d (BNA) 1407 (S.D.N.Y. 2007).

282. *See* 17 U.S.C. § 1301(b)(1).

283. 17 U.S.C. § 1301(a)(1).

284. *See* 17 U.S.C. § 1301(b)(3).

285. *See* 17 U.S.C. § 1301(b)(4).

286. *See id.*

287. *See* 17 U.S.C. § 1301(b)(5).

288. *See id.*

along with articles that are normally part of useful articles.[289] Combinations of hull and deck are also eligible.[290] The Act specifically denies protection to designs that lack originality; that are staple or commonplace; that differ from staple or commonplace designs "only in insignificant details or in elements which are variants commonly used"; that are solely utilitarian; or that were made public by the designer or owner more than two years before registration.[291] The VHDPA has a provision similar to the derivative works right in the broader Copyright Act: it protects designs that are "a substantial revision, adaptation, or rearrangement" of otherwise excluded material, such as a long-public design.[292] Issuance of a design patent terminates VHDPA protection.[293]

The design owner must submit an application for registration[294] and must affirm that the design has been fixed in a useful article.[295] Applications must include drawings or other pictorial representations both adequate to show the design and suitable for reproduction.[296] Protection lasts for ten years[297] from when the design is first made public[298] or the publication of the corresponding registration, whichever is earlier.[299] The Copyright Office must publish lists and indexes of designs, and cancellations of designs,[300] and may publish the drawings or pictorial representations included in the applications.[301] In any case, the Office must maintain a file of drawings and pictorial representations available to the public.[302]

289. 17 U.S.C. § 1301(b)(2).
290. 17 U.S.C. § 1301(a)(2).
291. 17 U.S.C. § 1302(3).
292. 17 U.S.C. § 1303; *see* 17 U.S.C. § 1302(5) (implementing two-year bar). The only case implementing the VHDPA, *Maverick Boat Company v. American Marine Holdings*, took a relatively stringent view of what qualifies as a "substantial revision." 418 F.3d 1186, 1191 (Fed. Cir. 2005). The Federal Circuit held that changes to a design were corrections of a mistake and thus simply made the original design function as intended. *Maverick Boat Company*, 416 F.3d at 1191; *see* Maverick Boat Co. v. Am. Marine Holdings, 70 U.S.P.Q. 2d 1493, 1499 (S.D. Fla. 2004).
293. 17 U.S.C. § 1329. Common law rights, trademark rights, and rights against unfair competition are unaffected by the VHDPA. 17 U.S.C. § 1330.
294. 17 U.S.C. § 1310(c).
295. 17 U.S.C. § 1310(d)(5).
296. 17 U.S.C. § 1310(h).
297. 17 U.S.C. § 1305(a).
298. *See* 17 U.S.C. § 1311.
299. 17 U.S.C. § 1304.
300. *See* 17 U.S.C. § 1313(a).
301. 17 U.S.C. § 1315(a).
302. 17 U.S.C. § 1315(b).

In addition to registration, the VHDPA implements another copyright-style formality—notice. Useful articles embodying the protected design must be marked with a designation indicating protection, along with either the year protection began and the owner's name, or the registration number.[303] Notice matters under the VHDPA. If it is omitted, the design owner cannot recover damages from an infringer unless the infringer had received written notice of protection.[304] In addition, if a defendant began activity that would otherwise infringe but for lack of notice, and the design owner then provides notice, injunctive relief is barred unless the owner reimburses the defendant for reasonable expenditures or contractual obligations incurred before notice was received.[305]

The owner of a protected design has exclusive rights to "make, have made, or import, for sale or for use in trade, any useful article embodying that design," and to "sell or distribute for sale or for use in trade" such articles.[306] Anyone who engages in that conduct without authorization infringes those rights.[307] Infringement is determined by whether the accused article is substantially similar to the protected article.[308]

However, infringement under the VHDPA is significantly limited. The Act has a knowledge requirement: infringement requires that the defendant have knowledge that the design is protected and that the accused article copied it.[309] Sellers and distributors of infringing articles who did not make or import the article infringe only under two conditions.[310] First, the seller or distributor induced or acted in collusion with the manufacturer to make the article, or with an importer to import it.[311] Merely purchasing such an article, or ordering a purchase, in the ordinary course of business does not qualify as inducement or collusion.[312] Second, the seller or distributor refused, upon request of the design owner, to make a prompt, full disclosure of the article's source, and that

303. 17 U.S.C. § 1306(a); *compare* 17 U.S.C. § 401(a) (permissive marking of visually perceptible copies).

304. 17 U.S.C. §§ 1307(a)–(b).

305. *Id.* at § 1307(b).

306. 17 U.S.C. § 1308.

307. 17 U.S.C. § 1309(a). The VHDPA limits an "infringing article" to exclude "an illustration or picture of a protected design in an advertisement, book, periodical, newspaper, photograph, broadcast, motion picture, or similar medium." 17 U.S.C. § 1309(e).

308. 17 U.S.C. § 1309(e); *see* Maverick Boat Co. v. Am. Marine Holdings, 418 F.3d 1186, 1192.

309. 17 U.S.C. § 1309(c).

310. 17 U.S.C. § 1309(b).

311. 17 U.S.C. § 1309(b)(1).

312. *Id.*

person orders or reorders the article after receiving notice by registered or certified mail of the protected design.[313]

Similarly, someone who incorporates into their product an infringing article acquired from others in the ordinary course of business, or who makes or processes the infringing article for another without knowledge of the protected design's embodiment in the article, is not liable unless they engaged in inducement or collusion as described above.[314] Reverse engineering via reproduction is permitted, although "solely for the purpose of teaching, analyzing, or evaluating the appearance, concepts, or techniques embodied in the design, or the function of the useful article embodying the design."[315] Finally, anyone who brings an infringement action knowing that the design's registration "was obtained by a false or fraudulent representation materially affecting the rights under this chapter" can be liable for up to $10,000 along with costs and attorney's fees.[316]

Remedies for infringement are similar to those of the larger Copyright Act, with a few notable exceptions. Injunctive relief is available,[317] but sellers or distributors who suffer damage due to an injunction wrongfully obtained have a cause of action against the plaintiff.[318] The plaintiff can recover compensatory damages[319] or the infringer's profits;[320] the court can also increase damages to a maximum of $50,000 or $1 per copy, whichever is greater.[321]

2. The Genesis of the VHDPA

Few things motivate interest groups more than adverse Supreme Court decisions.[322]

In 1989, the U.S. Supreme Court unanimously invalidated a Florida statute prohibiting the use of direct molding to duplicate and sell any vessel hull or other component manufactured by another without written permission.[323]

313. 17 U.S.C. § 1309(b)(2).
314. 17 U.S.C. § 1309(d).
315. 17 U.S.C. § 1309(g).
316. 17 U.S.C. § 1325.
317. 17 U.S.C. § 1322(a).
318. 17 U.S.C. § 1322(b).
319. 17 U.S.C. § 1323(a).
320. 17 U.S.C. § 1323(b).
321. 17 U.S.C. § 1323(a).
322. *See* Sepehr Shahshahani, *The Role of Courts in Technology Policy*, 61 J. LAW & ECON. 37, 38 (2018) (describing a "multiperiod game in which the policy set by the Court in the first period is subject to revision by Congress, which is lobbied by interest groups.").
323. Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141 (1989). The law also forbade knowingly selling an infringing hull or component. Fla. Stat. § 559.94(2).

Florida enacted the legislation to protect the original manufacturers and designers of boat hulls that, while potentially innovative, were unpatented.[324] Direct molding is an "efficient and inexpensive" method of duplicating such hulls.[325] Essentially, a competitor uses the vessel's hull to create a mold that replicates the hull with all of its features. The Florida legislature viewed this technique, known as "splashing" the hull, as an unfair method of competition.[326] Its regulatory scheme offered broader entitlements than even patent law in key respects: its duration of protection was unlimited, and it covered all boat hulls known or unknown, new or ancient.[327] Thus, a vessel designer could obtain exclusivity through Florida's laws for a hull for which a patent application had been rejected, or one for which a patent had been granted but the term expired. The Supreme Court found that this *sui generis* state IP regime conflicted with federal patent law and, thus, had to yield.[328]

The boating industry perceived the consequences of the ruling as an existential threat. Congress responded, albeit slowly, with the VHDPA of 1998.[329] It did so in response to boating industry fears that alternative means of protection, such as utility or design patents, were either too stringent or too slow to safeguard innovation.[330] There can be no doubt the VHDPA was targeted at a single interest group: as one witness stated during Congressional hearings, "it's focused, it's narrow, it's directed to industry."[331] The challenge, as with all customized IP regimes, was "to decide whether the boat industry people can make their case and keep the bill limited and focused."[332] The VHDPA needed to be strong and broad enough to be effective, but narrow and focused enough to maintain a coalition and minimize opposition.[333]

The Copyright Office offered lukewarm support for the VHDPA. It was concerned that the Act would protect functional aspects of a hull without undergoing the examination process of utility patents.[334]

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324. *See* Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 515 So. 2d 220 (Fla. 1987).

325. *Id.* at 223.

326. *Id.*

327. *See* Fla. Stat. § 559.94 (repealed).

328. *Bonito Boats*, 489 U.S. at 141.

329. *See* H.R. REP. 105-436, at 15–20 (1998).

330. *See* Hearings Before the Subcomm. on Courts and Intellectual Property of the House Comm. on the Judiciary, 105th Cong. 6 (1997) [hereinafter 1997 House VHDPA Hearing] (statement of Professor William T. Fryer III).

331. *Id*, at 4; *see* Samuelson & Scotchmer, *supra* note 142, at 1593.

332. *Id.*

333. *See* Liza Vertinsky, *Comparing Alternative Institutional Paths to Patent Reform*, 61 ALA. L. REV. 501, 523–24 (2010).

334. 1997 House VHDPA Hearing, *supra* note 330, at 19.

By contrast, industry representatives underscored their need for Congress to fill the gap caused by the Supreme Court's decision. When *Bonito Boats* was decided in 1989, the National Marine Manufacturers Association (NMMA), which represented firms generating 80% of U.S. recreational boat production, had convinced eleven states to ban hull splashing.[335] Those protections were now gone. The president of Zodiac of North America, maker of the famous rigid inflatable boats, stated that the creation of a plug to mold a hull typically cost at least $100,000 and consumed a year.[336] A competitor who splashed the hull could duplicate the plug in two weeks for $5000.[337] Copying, according to Zodiac, presented not merely unfair competition issues, but safety risks as well, since the copyist might not properly adapt other design elements that complemented the hull.[338] Zodiac openly invoked the specter of foreigners cheating American boatmakers of justly earned profits: "all our copied competition . . . comes from developing countries, Asian countries, South American countries, who copy my designs and come back here and compete with us."[339] A lawyer for Bayliner Marine Corporation blamed hull splashing for a lack of innovation in recent years, stating that copying was so common that he readily detected it at industry trade shows.[340] The low barriers to entry in the boatmaking field made copying an attractive proposition, he claimed.[341] He was confident that legitimate designers could readily detect copying—just as was claimed during the SCPA hearings, Bayliner's counsel stated that copyists lacked the paper trail that creators inevitably produced.[342] The VHDPA, he claimed, would also protect small firms and individual innovators, who otherwise might have to leave the industry in the wake of uncontrolled copying.[343]

Despite the apparently unified support of the American boatmaking industry, passage of the VHDPA was a close thing.[344] The bill faced rough sailing in the Senate, which raised two objections: first, that the House had failed to consult them; and second, that industrial design legislation had proven

335. *Id.* at 31–32 (statement of Mick Blackistone, Vice President, Government Relations, NMMA).

336. *Id.* at 28 (statement of J.J. Marie, President, Zodiac of North America).

337. *Id.*

338. *Id.* at 30.

339. *Id.*

340. *Id.* at 33–40 (statement of Donald Cramer, Corporate Counsel, Bayliner Marine Corp.).

341. *Id.* at 39.

342. *Id.* at 36.

343. *Id.* at 40.

344. *See* David Nimmer, *Appreciating Legislative History: The Sweet and Sour Spots of the DMCA's Commentary*, 23 CARDOZO L. REV. 909, 928 (2002).

to be fraught territory.[345] Senator John Ashcroft of Missouri complained that "no one from the House Committee on the Judiciary said a word on the floor about why this change to current law is necessary . . . . At best, it is a dubious idea that was attached without discussion or consideration."[346] Senator Orrin Hatch of Utah, the chair of the Senate Judiciary Committee, objected to the Act, but was willing to accede to its passage if it was sharply limited in duration as an experiment in industrial design regulation.[347] The Senate grudgingly agreed to adopt the VHDPA as part of the Digital Millennium Copyright Act, but only with a sunset clause terminating the hull design regime after two years.[348] The boating industry, undeterred, arranged the following year to have a provision styled as a "technical amendment" added to an omnibus bill that removed the sunset clause.[349] The temporary experiment was here to stay.

The VHDPA underwent several more revisions. The most important, in 2008, changed eligible subject matter protected to allow protection of a vessel's hull, its deck, or both.[350] This sought to address complaints that copyists could duplicate a boat hull without liability if they made sufficient modifications to the deck or superstructure that there was no substantial similarity to the overall original design.[351] It effectively broadened the Act by allowing claimants to protect smaller aspects of a vessel's design than the original version did.

The VHDPA's path to implementation was easier than that of the SCPA or AHRA, partly because there was little overt opposition from within the boatmaking industry, but mostly because Congress' IP agenda was full, with both the DMCA and a proposed database protection bill on its docket.[352] The relatively easy path to enactment, however, masked compromises in the bill that maintained solidarity at the price of efficacy.

345. The first industrial design bill was introduced in 1914. 1997 House VHDPA Hearing, *supra* note 330, at 17.

346. 144 CONG. REC. S9935, 9937 (daily ed. Sept. 3, 1998) (statement of Sen. Ashcroft).

347. 144 CONG. REC. S11887, 11889 (daily ed. Oct. 8, 1998) (statement of Sen. Hatch).

348. *See* Nimmer, *supra* note 344, at 928.

349. *Id.* at 931; *see* § 5005, S.1948 (enacted by Consolidated FY2000 Appropriations bill, § 1000(a), Pub. L. 106–113, 113 Stat. 1501 (1999)).

350. Vessel Hull Design Protection Amendments of 2008, §§ 1(b), (d), Pub. L. No. 110-434, 122 Stat. 4972 (2008) (amending 17 U.S.C. §§ 1301(a) and 1301(b) year).

351. *See* 154 CONG. REC. H6740-6741 (daily ed. July 22, 2008) (statements of Rep. Scott and Rep. Coble); Maverick Boat Co. v. Am. Marine Holdings, 70 U.S.P.Q. 2d (BNA) 1493, 1500 (S.D. Fla. 2004) (finding no substantial similarity between plaintiff registrant's design and defendant's design, "particularly where the protected design includes the deck of the vessel.").

352. *See* 1997 House VHDPA Hearing, *supra* note 330, at 1 (statement of Rep. Coble).

3. Why the VHDPA Failed

The VHDPA is almost certainly a failure as a statute. Since its enactment in October 1998, the Copyright Office has received a total of 538 registrations for hull designs, or an average of twenty-three per year.[353] Recent trends may be more indicative: there has not been a registration since February 2013. The VHDPA has generated scant litigation: only one case has been decided in federal court. Although a single data point is hardly predictive, this case did not cut towards greater deployment of the Act, since the plaintiff design registrant failed to prove infringement, had its design canceled, and had attorney's fees awarded against it.[354] The VHDPA's history as customized IP legislation is short and ineffective for two reasons: (1) the boating industry incorrectly concluded that its greatest risk was from insufficient IP protection, and (2) the internal divisions between copyists and creators among boating manufacturers.

The VHDPA displays the same internal divide between copyists and creators seen with the other two customized regimes, although in the boating industry, the creators were better organized and commanded the support of the leading industry trade association (the NMMA). The limited evidence available demonstrates that the dividing line between innovators and pirates was choppy at best. The sole infringement suit filed under the Act pitted two major domestic boatmakers against one another;[355] the defendant had purchased one of plaintiff's boats to study while deciding whether to produce a competing model.[356] Although the plaintiff provided expert testimony that the defendant had copied its hull,[357] the district court found the two designs not substantially similar[358] and the Federal Circuit affirmed.[359] Similarly, the single pre-VHDPA state court case about hull splashing was between two

353. *See* Patton, *supra* note 37.

354. Maverick Boat Co. v. Am. Marine Holdings, 418 F.3d 1186 (11th Cir. 2005). The case matched two large boating firms, so the result seems more likely tied to the Eleventh Circuit's substantive views of the VHDPA than to any deficiency on the part of Maverick's counsel. *See* Reagan Haynes, *Malibu Acquires Maverick Boat Group*, TRADE ONLY TODAY (Dec. 21, 2021), https://www.tradeonlytoday.com/manufacturers/malibu-acquires-maverick-boat-group; *Maverick Boat Group on course for major expansion in Fort Pierce, Florida*, BUS. J. (June 15, 2021), https://www.bizjournals.com/bizjournals/partner-insights/2021/06/15/maverick-boat-group-on-course-for-major-expansion.html.

355. Maverick Boat Co. v. Am. Marine Holdings, 418 F.3d 1186 (Fed. Cir. 2005).

356. Maverick Boat Co. v. Am. Marine Holdings, 70 U.S.P.Q. 2d (BNA) 1493, 1496 (S.D. Fla. 2004).

357. *Id.* at 1496–98.

358. *Id.* at 1500.

359. Maverick Boat Co., 418 F.3d at 1186.

small but similarly-sized boatmakers,[360] as was the case leading to the Supreme Court's *Bonito Boats* decision.[361] The two sides could not be neatly characterized as giants against garage firms either. The NMMA represented the 370 boat manufacturers who produced 80% of the recreational boats built in the United States,[362] but low barriers to entry in the industry meant that there were at least 4000 registered manufacturers in the country.[363] Zodiac's president strongly implied that these smaller "garage operations, with absolutely no R&D" were responsible for the industry's problems with copying of designs.[364] However, the litigation record, while sparse, is composed of disputes between peers. It also shows leading firms as both copyists and creators.

The potential for established firms to land on both sides of the copyist-creator divide is a convincing explanation for why the VHDPA incorporates significant limitations on liability: for sellers and distributors,[365] for acting without knowledge that a design was protected and copied,[366] and for copying for reverse engineering purposes.[367] The Act also provides that a seller or distributor suffering damage from an injunction wrongfully obtained can sue the registrant who obtained the injunction for damages, including lost profits and loss of goodwill; punitive damages are available in cases of bad faith, along with attorney's fees.[368] In part, those provisions may reflect Congressional experience with the SCPA, which had similar limitations.[369] But it also suggests that the industry coalition supporting the VHDPA, including its limitations, did so at least in part because its firms were a mixture of innovators and imitators.

The VHDPA's liability scheme, like the prior two regimes, was designed in large part to protect American boatmakers against the specter of foreign pirates. As a political matter, this configuration is unsurprising: domestic boating interests participated extensively in the drafting of the VHDPA, while

360. Summerford Racing, Inc. v. Shadow Boat, Inc., 1986 Tenn. App. LEXIS 3438 (Tenn. Ct. App. 1986).

361. Both firms also went out of business during the economic downturn in the late 1980s and early 1990s. *See 1989 Thunder Craft Boats Values, Specs and Prices*, J.D. POWER, https://www.nadaguides.com/Boats/1989/Thunder-Craft-Boats; Suzy Hagstrom, *Boat Makers Flail Amid Sinking Sales*, ORLANDO SENTINEL (May 24, 1992), https://www.orlandosentinel.com/news/os-xpm-1992-05-25-9205231057-story.html.

362. 1997 VHDPA Hearing at 32.

363. *Id.* at 39.

364. *Id.*

365. 17 U.S.C. § 1309(b).

366. 17 U.S.C. § 1309(c).

367. 17 U.S.C. § 1309(g).

368. 17 U.S.C. § 1322(b).

369. *See* 1997 VHDPA Hearing at 4–5, 8 (Fryer testimony).

foreign ones did not.[370] And, the Act's focus on controlling imports acted as a mechanism for holding together the coalition that supported it. Dealers vending U.S.-made boats embodying a protected design would be immune, while those importing foreign-made ones would not. For sellers and distributors, the mere purchase of an infringing item did not constitute infringement, as long as they did not manufacture or import the article. Indeed, one witness for a domestic manufacturer expounded an example of copying that involved "someone who has become a major competitor who imports boats from the Orient."[371] Xenophobia was a rhetorical tool that was reified in the resulting legislation.

The boating industry also sought to shore up its business model against the wrong risk. The Supreme Court's decision in *Bonito Boats* in 1989 appeared to open the door for copyists to use plug molding to duplicate innovative hulls produced by their competitors. Under the conventional economic logic of IP, the cost of a boat should fall on average, since copyists could avoid the overhead incurred by original designers and since firms responsible for the new hulls would have to slash prices to compete with knockoffs.[372] All else equal, when goods become cheaper, consumers purchase more of them.

But that is not what happened. Unlike in sectors such as recorded music, unauthorized copies are not created or distributed costlessly: recreational boats are still expensive to build even if one can free ride on a competitor's design. The U.S. Bureau of Transportation Statistics published data showing that recreational boat sales in the wake of the *Bonito Boats* decision *fell* by almost 10% from 1990 to 1991.[373] Sales increased from 1991 to 1992, and by 1993 had reached roughly the same level as in 1990.[374] Sales decreased in 1997 and 1998, but increased again in 1999, the year after the VHDPA's passage.[375] The number of boats sold exploded in 2001, increasing by 53% year over year, even though increased IP protection should have allowed innovative manufacturers to raise prices.[376] In 2008—the year that Congress passed the amendments to the VHDPA to increase its scope of protection and thus potency—

370. 1997 VHDPA Hearing at 27–41.

371. *Id.* at 38 (statement by President of Zodiac of North America.)

372. *See* Wendy J. Gordon, *An Inquiry into the Merits of Copyright: The Challenges of Consistency, Consent, and Encouragement Theory*, 41 STAN. L. REV. 1343, 1433–34 (1989).

373. *Figure 9—U.S. Recreational Boat Sales*, BUR. OF TRANSPORTATION STATS. (Nov. 19, 2012), https://www.bts.gov/archive/publications/by_the_numbers/maritime_trade_and_transportation/figure_09.

374. *Id.*

375. *Id.*

376. *Id.*

manufacturers sold 704,820 boats; the following year, they sold 572,500.[377] This data does not directly measure the level of copying by direct molding process after the passage of the VHDPA or its amendments, and it cannot reveal any information about the level of innovation in the boating industry. However, sales consistently moved in the opposite direction from what one would expect based on the economics of unauthorized copying.

Moreover, there was a shadow factor lurking in the background in 1990 that almost certainly explains the decline in sales that year, and it is unrelated to IP. That year, Congress introduced a 10% luxury tax on goods that included boats with prices greater than $100,000.[378] Luxury boat makers cut operations and prices.[379] The NMMA claimed the tax caused the loss of 19,000 jobs, and then-Representative Olympia Snowe of Maine stated that luxury boat sales had fallen 86% year over year.[380] However, during hearings on the VHDPA, a representative from the leading boatmaker trade group admitted that there was no way to differentiate the effects of the luxury tax from the practice of hull splashing.[381] The luxury tax was repealed on all goods except automobiles in 1993;[382] from 1993 to 1994, boat sales increased from approximately the same level as in 1990 (498,775) to 576,200, and in 1995, they went up again, to 663,760.[383] Correlation is not causation, but the trend is at least suggestive.

Overall, the recreational boating industry is a relatively static field, at least in terms of the number of registered vessels in the United States.[384] In 1990, there were nearly eleven million registered recreational boats in America; in 1998, there were 12.5 million; in 2008, 12.7 million; and in 2020, 11.8 million.[385] The presence, or absence, of boat-specific IP rules does not, at first glance, appear to have a significant effect on the number of boats sold or in

377. *Id.*; *see* Pub. L. No. 110-434, 122 STAT. 4972 (110th Congress 2008).

378. *See* Linda M. Harrington, *Luxury Tax on Boats Sinks Jobs, U.S. Revenue, Critics Say*, CHICAGO TRIBUNE (June 12, 1991), https://www.chicagotribune.com/news/ct-xpm-1991-06-13-9102220626-story.html.

379. *See* Agis Salpukas, *Falling Tax Would Lift All Yachts*, N.Y. TIMES (Feb. 7, 1992), https://www.nytimes.com/1992/02/07/business/falling-tax-would-lift-all-yachts.html.

380. *Id.*

381. 1997 House VHDPA Hearing, *supra* note 330, at 32 (Blackistone statement).

382. *See Good Riddance to the Luxury Tax*, WALL ST. J. (Jan. 6, 2013), https://www.wsj.com/articles/SB10418077299767946 64.

383. *See Figure 9—U.S. Recreational Boat Sales*, *supra* note 373.

384. *See, e.g.,* Matthew Chambers & Mindy Liu, Figure 8—U.S. Recreational Boat Registrations, 1990–2010, *Maritime Trade and Transportation by the Numbers*, BUR. OF TRANSPORTATION STATS. (Mar. 7, 2013), https://www.bts.gov/archive/publications/by_the_numbers/maritime_trade_and_transportation/index.

385. *Table 1-11, Number of U.S. Aircraft, Vehicles, Vessels, and Other Conveyances*, BUR. OF TRANSPORTATION STATS. (Mar. 7, 2013), https://www.bts.gov/content/number-us-aircraft-vehicles-vessels-and-other-conveyances (boating data as of Aug. 20, 2021).

circulation. As a 2003 joint report of the Copyright Office and U.S. Patent and Trademark Office (USPTO) on the VHDPA found, "no evidence was adduced regarding the extent of copying, or 'hull splashing,' in the marine industry either before or after the passage of the VHDPA."[386]

Overall, the pattern of sales and lack of litigation suggest that the VHDPA was not effective in addressing infringement, probably because infringement was not as widespread as the industry claimed. Even before the 1989 *Bonito Boats* decision invalidated state laws banning use of the direct molding process to copy a competitor's item, firms rarely brought such claims in court, despite some success in the few suits adjudicated.[387] Twelve states had such laws, beginning with California in 1978.[388] Three cases were tried to decision in state court, one in California (over a jewelry design[389] and over a juicer,[390] with the designer winning in both) and one in Tennessee (over a boat, where the designer lost).[391] Seven cases reached the decision stage in federal courts.[392] Plaintiff designers were victorious in three; the competing defendant won one; and three cases were procedural in nature.

The record after the VHDPA's passage is, at best, inconclusive about the Act's efficacy. The 2003 report by the Copyright Office and USPTO noted that it was difficult to determine whether the Act had any real effect in deterring infringement.[393] Representatives from boat manufacturers claimed success in issuing cease and desist letters to alleged violators.[394] They also claimed that the legislation increased innovation in their industry, although one

386. THE VESSEL HULL DESIGN PROTECTION ACT: OVERVIEW AND ANALYSIS 20 (Nov. 2003), https://www.copyright.gov/reports/vhdpa-report.pdf.

387. *See* David W. Carstens, *Preemption of Direct Molding Statutes:* Bonito Boats v. Thunder Craft Boats, 3 HARV. J.L. & TECH. 167, 174–78 (1990); *but see* 1997 House VHDPA Hearing, *supra* note 330, at 32 (stating 11 states had such laws).

388. Carstens, *supra* note 387, at 175, n. 43.

389. Gladstone v. Hillel, 250 Cal. Rptr. 372 (Cal. Ct. App. 1988).

390. There is no published opinion for this California Superior Court decision, but it is described in the federal court decision between the same parties. Metro Kane Imps., Inc. v. Rowoco, Inc., 618 F. Supp. 273, 277 (S.D.N.Y. 1985).

391. Summerford Racing, Inc. v. Shadow Boat, Inc., 1986 Tenn. App. LEXIS 3438 (Tenn. Ct. App. 1986).

392. *See* Ferrari S.p.A. Esercizio Fabriche Automobili Corse v. Roberts Motor Co., 739 F. Supp. 1138; Ferrari S.p.A. Esercizio Fabbriche Automobili E Corse v. McBurnie Coachcraft Inc., 10 U.S.P.Q. 2d (BNA) 1278 (S.D. Cal. 1988); JTG of Nashville v. Rhythm Band, 693 F. Supp. 623 (M.D. Tenn. 1988); Brahma, Inc. v. Joe Yeargain, Inc., 665 F. Supp. 1447 (N.D. Cal. 1987); Power Controls Corp. v. Hybrinetics, 806 F.2d 234 (Fed. Cir. 1986); Interpart Corp. v. Imos Italia, 777 F.2d 678 (Fed. Cir. 1985); Metro Kane Imps. v. Rowoco, Inc., 618 F. Supp. 273.

393. THE VESSEL HULL DESIGN PROTECTION ACT: OVERVIEW AND ANALYSIS 9–10 (Nov. 2003), https://www.copyright.gov/reports/vhdpa-report.pdf.

394. *Id.* at 10.

argued that the impact was minimal since the VHDPA's effectiveness in diminishing infringement remained in doubt,[395] and another said the Act "does [not] have an impact on our already strong desire to create new and exciting products for [our] customers."[396] Strikingly, though, the manufacturers touting innovation could not point to price increases enabled by these advances, and indeed proffered no information to enable price comparisons between boats with registered versus unregistered designs.[397] This accords with the 1997 testimony by a boatmaker representative before Congress that copyists often charged *more*, not less, than the original designer's boat.[398] That price premium contradicts the standard logic of IP protection, which is that the copyist charges less, and indeed a different representative at the hearing claimed that "competitors can copy a design and hull and then undersell the originating company which must charge more for its boat because it must amortize" research and development costs.[399] Industry witnesses at a hearing on the efficacy of the VHDPA "could not provide any specific examples of designs that would not have been created and introduced to the public but for the protection of the Act."[400] As a follow-on, representatives from the boatmakers "were specifically asked to provide any such information during the reply stage, but none was proffered."[401] There is no evidence to support the contention that the VHDPA was needed to protect boating innovation.

Ironically, boating interests also claimed that the VHDPA could lead to *increased* piracy. When asked why the industry had not submitted more registrations (only 156 at the time of the hearing), a representative for the NMMA stated that manufacturers "fear[ed] that publication of designs 'would only encourage copying by unscrupulous competitors,'" and that "publication of the complete drawings or photographs on the [Copyright] Office's official web site would lead to copying by foreign manufacturers."[402] But the rationale for the VHDPA was that copying was *already* cheap and easy: purchase a competitor's hull, splash it, and duplicate their design at a fraction of its cost.[403] Indeed, witnesses at the VHDPA hearings joked about the ease of detecting

395. *Id.* at 11–12.

396. *Id.* at 13.

397. *Id.*

398. 1997 House VHDPA Hearing, *supra* note 330, at 38 (statement of corporate counsel for Bayliner Marine Corp.)

399. *Id.* at 29–30 (statement of President of Zodiac North America).

400. THE VESSEL HULL DESIGN PROTECTION ACT: OVERVIEW AND ANALYSIS, *supra* note 386, at 12.

401. *Id.*

402. *Id.* at 11.

403. 1997 House VHDPA Hearing, *supra* note 330, at 28, 30 (statement of president of Zodiac of North America).

copying by competitors—one manufacturer awarded a small prize to the staff member who found the most knockoffs at the leading industry trade show.[404] If detection were easy, then there would be no reason to avoid using the VHDPA. And if duplication with access to a hull, but not to design documents, were difficult, then the VHDPA would be unnecessary, since boatmakers could protect themselves using trade secret law.[405]

Moreover, the Copyright Office stated during the hearings on the VHDPA that the notice provided by the registration system was in the public interest, since it enabled competitors to avoid infringing others' designs.[406] The 2003 report also noted there was no evidence in the record of any harm derived from copying based upon registration information, including by foreign manufacturers.[407] One manufacturer argued that registration should require a designer to specify precisely the features claimed to be protected to reduce "wasted time dealing with frivolous claims throughout the industry."[408] And witnesses at the hearing who were not members of the boating industry supported the requirement to publish registrations, including on the internet.[409] The evidence suggests that the industry had mixed feelings about both the Act and the problem it purported to address.

The VHDPA, like its predecessor customized regimes, proved ineffective. The next Part explores common themes across all three systems.

IV. THEMES AND BREAKING POINTS

This Article's three case studies have three points of commonality: (1) the ineffectiveness of their rules for the groups that pressed for them; (2) the precarious, fractal-like nature of the interest groups pressing for them; and (3) the perilous precision with which their IP regimes sought to entrench the technological and economic backdrop of the relevant industry.[410] The first two similarities complicated lobbying efforts and weakened the substance of changes that were eventually enacted. These patterns run counter to the concerns public choice theory holds about the potential for interest groups to engage in rent-seeking via legislation. The third demonstrates the difficulty of

404. *Id.* at 33 (statement of Donald Cramer, Corporate Counsel, Bayliner Marine Corp.).

405. *See* Samuelson & Scotchmer, *supra* note 142, at 1585–90.

406. 1997 VHDPA Hearing at 24 (statement of Marybeth Peters, Register of Copyrights).

407. THE VESSEL HULL DESIGN PROTECTION ACT: OVERVIEW AND ANALYSIS, *supra* note 386, at 21.

408. *Id.* at 15.

409. *Id.* at 18.

410. *See* 1992 Senate AHRA Hearing at 206 (statement of Professor Jessica Litman that "it usually turns out to be folly to try to legislate technology.").

managing innovation even for incumbent entities with expertise and private information.[411] This Part explores each theme.

A. INEFFECTIVENESS

Earlier, this Article defined effectiveness using one or more of four criteria: (1) effects on innovation, (2) transition between technologies and business models, (3) capture of private rents, and (4) interest group unity. This subpart evaluates the three regimes under each criterion.

First, there is little evidence of positive effects on innovation from the regimes. For the SCPA and VHDPA, rights accrue only upon registration, so the number of registrations is a useful proxy for industry reliance upon the regime to protect innovation. The AHRA does not require registration; it enables copyright owners to pursue infringement claims against equipment producers and distributors who do not conform to the Act's requirements. The scant number of AHRA suits, their lack of success, and marketplace rejection of DATs all suggest that it, too, fails here.

Second, for the transition criterion, only the SCPA has any claim to efficacy, and it is tenuous. The SCPA was based upon 1970s chip technology, when copying was a threat because chips were relatively large-scale and simple.[412] Even in the early 1980s, chips were sufficiently complex and advanced that copying was not a viable mechanism economically to duplicate a chip.[413] Indeed, witnesses described technological and financial barriers to copying in hearings in 1979.[414] By contrast, neither the AHRA nor the VHDPA can claim effectiveness under this criterion. For the music industry, the relevant transition—to digital audio tapes—flopped. And the transition to digital music overall created a serious threat to the industry's existing business models from peer-to-peer file sharing.[415] At best, the AHRA was irrelevant to that transition; at worst, it accelerated the problem by shifting consumer demand away from a relatively controlled medium—the DAT—to ones with no technological constraints, in the forms of CDs and MP3 files. The VHDPA fails simply because neither boatmaking technology nor business models have

411. *See* CLAYTON CHRISTENSEN, THE INNOVATOR'S DILEMMA (2011).

412. *See* Steven P. Kasch, *The Semiconductor Chip Protection Act: Past, Present, and Future*, 7 HIGH TECH. L.J. 71, 96–97 (1992).

413. *See id.* at 95 (stating that copying was not feasible as a strategy at least by 1992, and perhaps as early as 1979).

414. *Id.* at 97.

415. *See* Alejandro Zentner, *Measuring the Effect of File Sharing on Music Purchases*, 49 J.L. & ECON. 63 (2006); but *see* Felix Oberholzer-Gee & Koleman Strumpf, *File Sharing and Copyright*, 10 INNOVATION POL'Y & ECON. 19 (2010).

changed in any significant way since its adoption.[416] Some firms exited via insolvency, but boats and how consumers purchase them are largely unchanged from when *Bonito Boats* was decided. Overall, under this criterion, only the SCPA has any claim to success, and that claim is weak.

Third, in assessing efficacy in extracting rents for interest groups, only the SCPA has a plausible claim, and that hangs by a thread. While the threat to use new IP rights might, in theory, enable an industry to extract gains from other parties, the dearth of litigation testing the three systems implies that any such threats were hollow. The SCPA has the best claim to providing a credible threat, but it rests on merely two cases, one of which also relied on patent law. Neither the VHDPA nor the AHRA generated any substantial body of litigation, nor was that litigation successful. That, in combination with the lack of utilization of these two systems, suggests that they were not a source of leverage for industry.

Finally, in terms of unity, all three interest groups were unified about the customized regime itself by the time it was enacted, but it is unclear whether that consensus extended beyond IP matters or lasted beyond the signing of the legislation. Moreover, any broader or longer-lived harmony might result from other factors, such as mergers (as with Sony and CBS Records) or specialization (as with chipmakers). At minimum, the music industry splintered with the advent of digital music services such as iTunes, ringtones, and Webcasting. [417] With semiconductors, Intel ruthlessly squeezed out competitors to dominate the personal computer industry, but was later overtaken in mobile devices by AMD and other firms that specialized in relatively lower-powered chips. [418] With boatmakers, relatively minor innovation undercut unity even at the time of the VHDPA's passage. In 1998, the year the bill was enacted, divisions over the then-exploding market in personal watercraft such as jetskis led the chairman of major boatmaker Genmar to resign from the NMMA, announcing he would not return until personal watercraft makers were expelled from the trade association.[419] In recent years, unity has likely increased, but only due to consolidation in the industry. In short, while it is difficult to arrive at definitive results under the

416. *See* Michael Verdon, *40 Years of Ups and Downs*, SOUNDINGS TRADE ONLY (June 1, 2019), https://www.tradeonlytoday.com/industry-news/40-years-of-ups-and-downs.

417. *See* U.S. v. ASCAP, 627 F.3d 64 (2d Cir. 2010); Bonneville Int'l v. Peters, 347 F.3d 485 (3rd Cir. 2003); Jeff Leeds, *Universal in dispute With Apple Over iTunes*, N.Y. TIMES (July 2, 2007), https://www.nytimes.com/2007/07/02/business/media/02universal.html.

418. *See* CHRIS MILLER, CHIP WAR 235–40 (2002).

419. Verdon, *supra* note 416.

unity criterion, there is significant evidence to doubt that the three customized regimes notably increased consensus.

On all four criteria, the SCPA, AHRA, and VHDPA plainly appear to be ineffective.

B. THE EVER-DISSOLVING INTEREST GROUP

Interest groups tend to be fragile because they are coalitions of smaller groups whose interests sometimes coincide and sometimes diverge. This has two important effects. First, entities excluded from the coalition and ones who leave it can often block legislative change, including by non-legislative means. Recall that in the run up to the AHRA, songwriters and music publishers were initially excluded from negotiations between equipment manufacturers and the record labels. They responded by suing to block introduction of the technology that was the subject of these discussions: the DAT recorder. The lesson that the songwriters and publishers taught the labels is that no industry is an island: every group reveals itself, fractal-like, to be comprised of a set of subgroups with their own agendas. This creates a definitional problem for theories of public choice and interest group lobbying; determining what constitutes a "group" is a fraught process.

The AHRA also demonstrates the Goldilocks problem that any putative set of interests faces ex ante: to maximize lobbying power and minimize political opposition, the group or coalition must be broad enough to prevent objections or defections from fellow travelers but narrow enough that its proposal is not vitiated or defeated altogether by other, less related interests. The music industry's initial unmitigated opposition to the DAT failed because its coalition was too narrow—it excluded some standard music interests in writers and publishers. Broadening this grouping by bringing these other parties inside the tent (literally, in the case of Sony's purchase of CBS Records) weakened the force of the resulting legislation but enabled it to be enacted. And the AHRA ultimately failed in part because the music industry had to appease the nascent but rising personal computer industry. Hardware and software firms lobbied successfully to have PCs, software, hard drives, and the like excluded from the AHRA's regulatory aegis.[420] When computers began to supplant specialized home stereo equipment, the AHRA rapidly became a dead letter.[421]

420. *See* Recording Indus. Ass'n of Am. v. Diamond Multimedia Sys., 180 F.3d 1072 (9th Cir. 1999).

421. A few skeptics predicted this shift, including MIT researcher Philip Greenspun. *See* Lutzker, *supra* note 216, at 184–85. The AHRA's failure may be more consequential than it

The second effect of interest group fragility is on the legislative output of lobbying: the customized IP regime needs to be broad enough to advance the shared goals of the group's members but narrow enough to avoid issues that could fracture the alliance and draw opposition from outsiders. The SCPA had to permit copying of chip designs via reverse engineering to overcome opposition from semiconductor firms that played a "second source" role. The AHRA had to adopt a royalty system that would increase the cost of DAT technology, making it less attractive to consumers, in order to obtain assent from songwriters and music publishers. And the VHDPA had to largely immunize distributors of infringing vessels from liability to keep them inside the political tent with manufacturers. Each legislative compromise was politically necessary, but each came at a cost in efficacy.

Interest groups are thus caught between the Scylla of political disintegration and the Charybdis of ineffective reform.[422] Navigating that course is exceptionally challenging.

C. THE RISKS OF TECHNOLOGY ENTRENCHED IN LEGISLATION

Customized regimes have often foundered on the shoals of excessive specificity in their provisions. Interest groups face a conundrum. They would ideally prefer to maintain flexibility by being less specific about the technology requirements for eligibility or infringement of their creations.[423] But, some specificity is needed to demarcate subject matter eligibility and to differentiate the specialized regime from general-purpose ones. And it is difficult to avoid embedding the structure of the business model driven by an industry's technology into legislation; that is, after all, what proponents understand best.[424]

The SCPA fell into desuetude because the economics of semiconductors changed radically; it became far cheaper to create than to copy. This made IP-based limits on copying mask works obsolete. The AHRA failed because of the computer revolution, first with PCs and then with mobile devices.

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initially appears: the lack of technological controls on CDs and the computer equipment that reading from and writing to the discs contributed to the rise of peer-to-peer file sharing, which genuinely seemed to threaten the music industry. *See* Herman, *supra* note 237, at 173–74.

422. *See Scylla and Charybdis*, ENCYCLOPEDIA BRITANNICA, https://www.britannica.com/topic/Scylla-and-Charybdis (last accessed Feb. 2, 2024).

423. *See* Herbert Hovenkamp, *Technology, Politics, and Regulated Monopoly: An American Historical Perspective*, 62 TEX. L. REV. 1263, 1267 (1984) (noting "Politics is most important when the economics, technology, or structure of a particular market is unknown or uncertain.").

424. *See* Stuart Minor Benjamin & Arti K. Rai, *Fixing Innovation Policy: A Structural Perspective*, 77 GEO. WASH. L. REV. 1, 13–14 (2008).

Although the VHDPA is the least technologically specific of the three customized regimes, its failure was in part because the industry did not understand its own business risks. Copying was not anywhere near as great a threat as it was portrayed.

These particular lessons from customized IP regimes should translate well to other contexts. The problem of technological specificity is a frequent challenge in the design of regulatory systems. In cybersecurity, for example, rules that required the use of encryption standards approved by the federal government often referenced the Data Encryption Standard (DES).[425] DES was first adopted as a Federal Information Processing Standard (FIPS) in 1977 and was reaffirmed as late as 1999 (admittedly only for legacy systems), even though by then DES encryption keys could be broken through brute force attacks in less than a day.[426] Systems could thus be compliant with federal standards and yet also be highly insecure. Tech-specific security standards can also prolong the life of otherwise inefficient technologies, which is why most health care offices continue to maintain and use fax machines.[427] Under the Security Rule promulgated by the Department of Health and Human Services under authority delegated by the Health Insurance Portability and Accountability Act (HIPAA), sending protected health information, such as a patient's medical condition or social security number, over fax is deemed acceptable so long as the sender takes the minimal precaution of confirming the recipient's fax number.[428] E-mail encryption is still challenging to implement as a practical matter; faxes, by contrast, are antiquated but simple.[429] A baroque security rule has thus preserved the fax industry.

425. *See Data Encryption Standard*, ENCYCLOPEDIA BRITANNICA, https://www.britannica.com/topic/Data-Encryption-Standard (last accessed Feb. 2, 2024)

426. *Record Set in Cracking 56-bit Crypto*, CNET (Jan. 3, 2002), https://www.cnet.com/personal-finance/crypto/record-set-in-cracking-56-bit-crypto/.

427. *See* Rachel Withers, *Why in the World Do Doctor's Offices Still Use Fax Machines?*, SLATE (June 6, 2018), https://slate.com/technology/2018/06/why-doctors-offices-still-use-fax-machines.html.

428. *Does the HIPAA Privacy Rule permit a doctor, laboratory, or other health care provider to share patient health information for treatment purposes by fax, e-mail, or over the phone*?, HHS.GOV (July 26, 2013), https://www.hhs.gov/hipaa/for-professionals/faq/482/does-hipaa-permit-a-doctor-to-share-patient-information-for-treatment-over-the-phone/index.html.

429. Encrypting e-mail is not required under the Security Rule. However, informal guidance from HHS makes clear that sensitive matters may not be discussed over e-mail without encryption. *Does the HIPAA Privacy Rule permit health care providers to use e-mail to discuss health issues and treatment with their patients?*, HHS.GOV (July 26, 2013), https://www.hhs.gov/hipaa/for-professionals/faq/570/does-hipaa-permit-health-care-providers-to-use-email-to-discuss-health-issues-with-patients/index.html.

V. THE COMING STORMS?

The customized IP past is never dead. It's not even past. Thus far, these regimes have an unenviable track record. Yet proposals for new specialized IP systems occur regularly.[430] This Part explores some proposed candidates for new customized rule sets and shows how they face the same challenges as the three case study regimes.

The history of customized IP regimes offers important lessons to proponents and opponents alike. For skeptics, the record of failures provides a menu of effective countermeasures. For supporters, enthusiasm for customized IP regimes could use a dose of realism. These systems have not produced meaningful increases in innovation for semiconductors, audio equipment, or boatmaking.

So far, there are four other industries where customized IP regimes have been seriously mooted: weather, traditional knowledge, fashion, and privacy. These efforts can be informed by this Article's insights at the same time they test its conclusions.

A. WEATHER

Weather forecasts are valuable to a wide set of constituencies. Producers of this information have unsurprisingly sought customized IP rights over it. Attempts to create property rights in weather data have focused on the National Weather Service (NWS). The NWS records data on weather, climate, and related topics from U.S. government satellites, data buoys, and other sensors; warns the public about impending weather threats such as hurricanes; and makes predictions—forecasts—about future conditions.[431] The Service has been a regular target for legislation that would move its data from the public domain to control by private firms. In 1983, the Reagan administration introduced a proposal to sell the weather satellites used by the NWS to private entities; NWS would have had to re-purchase that data to engage in forecasting.[432] The idea was pushed by the Communications Satellite Corporation, which saw a potential captive market worth hundreds of millions

430. *See, e.g.*, Haochen Sun, *Redesigning Copyright Protection in the Era of Artificial Intelligence*, 107 IOWA L. REV. 1213 (2022).

431. *The National Weather Service*, https://www.weather.gov/about/ (last accessed Feb. 2, 2024).

432. *See* Philip J. Hilts, *Reagan Set to Sell Weather Satellites*, WASH. POST (Mar. 9, 1983), https://www.washingtonpost.com/archive/politics/1983/03/09/reagan-set-to-sell-weather-satellites/d00477c0-b228-4d44-b20c-23702d5140af/.

of dollars.[433] The plan created a firestorm of controversy, and the administration eventually abandoned it.[434]

The prospect of a customized regime returned in 2005 when Senator Rick Santorum introduced a bill that would have required the NWS to continue making its data available to private commercial weather information providers—but would have banned the agency from providing any service that competed with those firms.[435] Consumers would have been forced to pay for weather forecasts created from government-collected data that had previously been free.[436] The bill did not advance, in part because it was opposed by other powerful interest groups including airline pilots and even some private commercial weather companies.[437] Later, the Obama administration issued a rule preventing the NWS from creating weather applications for wireless devices such as tablets or smartphones to inhibit competition with private firms.[438] And in 2016, a Congressional representative pushed the National Oceanic and Atmospheric Administration to increase purchases of weather data from private firms to reduce the threat from Chinese hackers and anti-satellite missiles.[439]

Producers of weather information would dearly love to enjoy exclusivity over it. To date, though, interest group conflicts have stymied these efforts, although the problem of technological lock-in appears manageable for a customized weather IP regime.

B. TRADITIONAL KNOWLEDGE

A perennial candidate for customized IP systems is traditional or indigenous knowledge.[440] This knowledge includes material such as songs,

433. *See* Philip J. Hilts, *Reagan Signs Bill to Kill His Plan to Sell Weather Satellites*, WASH. POST (Nov. 29, 1983), https://www.washingtonpost.com/archive/politics/1983/11/29/reagan-signs-bill-to-kill-his-plan-to-sell-weather-satellites/f48b2491-6126-4ee7-b570-287155c70773/.

434. *Id.*

435. *See* Bob King, *Santorum's Weather Crusade*, POLITICO (Jan. 5, 2012), https://www.politico.com/story/2012/01/7-year-old-attack-on-weather-service-could-cloud-santorums-campaign-071129; S.786, 109TH CONG. (2005).

436. *Id.*

437. *Id.*

438. *Id.*

439. *See* Mike Henry, *NOAA and DOD Piloting Commercial Sources of Weather Data*, 55 AM. INST. PHYS. BULLETIN (May 6, 2016), https://www.aip.org/fyi/2016/noaa-and-dod-piloting-commercial-sources-weather-data.

440. *See* Justin Hughes, *Traditional Knowledge, Cultural Expression, and the Siren's Call of Property*, 49 SAN DIEGO L. REV. 1215 (2012); *see generally* Peter K. Yu, *Cultural Relics, Intellectual Property, and Intangible Heritage*, 81 TEMPLE L. REV. 433 (2008); Srividhya Ragavan, *Protection of*

histories, artwork, medicine, and farming techniques.[441] The motivations for customized regimes to protect this information are more noble than the other examples discussed in this Article: they are almost exclusively concerned with preventing exploitation of such knowledge by non-indigenous actors.[442]

Nonetheless, they meet this Article's criteria for customized IP regimes, although broadly speaking they tend to be focused on preservation rather than economic exploitation. While agencies such as the Environmental Protection Agency have incorporated IP-like considerations into their policies regarding traditional knowledge, customized legislation has encountered three obstacles.[443] The first, and by far the most important, is that thus far the coalition of interests opposed to a customized traditional knowledge regime has possessed more political power than proponents.[444] Copyists hold far more sway than creators in debates over indigenous knowledge. Here, as with weather, public choice challenges have blocked customized rules. Secondly, core American IP concepts such as authorship or inventorship are an awkward fit for information created and refined by groups, such as Native American tribes, whose exact membership varies over time.[445] Finally, it is not clear how to protect information that has varied and evolved over long periods of time, especially with the increased concern about a robust public domain among civil society groups in the last several decades.[446]

C. FASHION

Fashion designers have also pursued customized IP rules.[447] Unsurprisingly, proposed legislation has encountered the same set of

Traditional Knowledge, 2 MINN. INTELL. PROP. REV. 1 (2001); *but see* J. Janewa OseiTutu, *A Sui Generis Regime for Traditional Knowledge: The Cultural Divide in Intellectual Property Law*, 15 MARQ. INTELL. PROP. L. REV. 147 (2011) (raising concerns that a regime may be counterproductive).

441. *See* Angela R. Riley, *"Straight Stealing": Towards an Indigenous System of Cultural Property Protection*, 80 WASH. L. REV. 69, 76–82 (2005).

442. *See* Trevor G. Reed, *Fair Use as Cultural Appropriation*, 109 CALIF. L. REV. 1373, 1377–79 (2021).

443. *See, e.g.*, U.S. ENV'T PROT. AGENCY, CONSIDERING TRADITIONAL ECOLOGICAL KNOWLEDGE (TEK) DURING THE CLEANUP PROCESS (Jan. 3, 2017), https://www.epa.gov/sites/default/files/2020-10/documents/considering_traditional_ecological_knowledge_tek_during_the_cleanup_process_updated_link.pdf.

444. *See* Riley, *supra* note 441, at 85–86.

445. *See* Christine Haight Farley, *Protecting Folklore of Indigenous Peoples: Is Intellectual Property the Answer?*, 30 CONN. L. REV. 1, 12–40 (1997).

446. *See id.*

447. *See Protection for Fashion Design: Statement of the U.S. Copyright Office before the Subcommittee on Courts, the Internet, and Intellectual Property*, House Committee on the Judiciary, 109th Cong. (July 27, 2006), https://www.copyright.gov/docs/regstat072706.html.

challenges that other customized regimes have faced.[448] In particular, designers strongly support a fashion-specific system but retailers do not, leading to political stalemate.[449] Large distributors, such as clothing outlets and department stores, oppose new rules because they copy successful fashions and sell them comparatively cheaply.[450] The split between copyists and creators favors the former in fashion. The fashion industry thus faces the same fracture problem that other seemingly monolithic interest groups have demonstrated. And although proponents have adjusted to these political realities by scaling back proposals, such as by reducing the term of protection to only three years, there has been little Congressional enthusiasm for the project in recent years.[451]

The technological specificity problem is less severe for proposed fashion design legislation since protection is easily defined, covering headgear, apparel, footwear, and the like. This strength, though, is also a weakness because it expands the range of other interests who might be affected by and therefore oppose the bill. The underlying fashion business model may also be vulnerable to disruptive technological change. The reduced cost of computer-assisted design and drafting (CAD) software and the advent of inexpensive 3-D printing raises the specter of increasingly widespread home copying of fashions. A customized fashion protection regime might deter Walmart, but it will not stop fashion enthusiasts with a bit of technological competence, a 3-D printer, and photographs of the latest designs from the runways in Milan.[452] Customized fashion rules face difficult challenges in both public choice and innovation terms.

448. *See* Carroll, *supra* note 9, at 1431 (noting internal divisions within fashion industry have impeded efforts to obtain customized regime).

449. *See* Christopher A. Cotropia & James Gibson, *The Upside of Intellectual Property's Downside*, 57 UCLA L. REV. 921, 970–71 (2010).

450. *See* C. Scott Hemphill & Jeannie Suk, *Remix and Cultural Production*, 61 STAN. L. REV. 1227, 1230–31 (2009).

451. The most recent bill was introduced in 2012. Innovative Design Protection Act of 2012, S. 3523, 112TH CONG. (2012). It did not receive a vote.

452. *See* Susan Scafidi, *F.I.T.: Fashion as Information Technology*, 59 SYRACUSE L. REV. 69, 87 (2008) (noting rapid internet distribution of images of new fashion contributes to piracy).

D. PRIVACY AND PERSONAL DATA

Lastly, a current popular target for customized IP proposals is personal data.[453] Legislators have introduced a wide array of draft bills;[454] scholars have advocated for customized personal data rights regimes; and civil society groups have touted this approach[455] as a means of mitigating privacy concerns. Support for a customized personal data system stems from at least two sources: pessimism among privacy advocates about the likelihood of adoption of a broad-based federal privacy regime,[456] and the default American preference for handling allocation of entitlements through market mechanisms such as property rights.[457] Property rights in personal data seem an odd fit as a candidate for inclusion as a customized IP regime; in theory, these entitlements are available to everyone in the United States, and the general public has never been an interest group with any particular power. Moreover, intermediaries that gather, use, and sell personal data have considerable political power that could block legislation.

A worrisome possibility is that these intermediaries could support IP rights in personal data because it is likely to augment their ability to monetize that data and to exclude competitors.[458] While some privacy legislation imposes direct regulatory constraints on personal data collection and use, the core of personal data proposals confers IP rights on consumers.[459] The difficulty is

453. *See* Steven H. Hazel, *Personal Data as Property*, 70 SYR. L. REV. 1055 (2020); Leon Trakman, Robert Walters, & Bruno Zeller, *Is Privacy and Personal Data Set to Become the New Intellectual Property?*, 50 IIC – INT'L REV. INTELL. PROP. & COMPETITION L. 937 (2019); *but see* Lothar Determann, *No One Owns Data*, 70 HASTINGS L.J. 1 (2019); Mark A. Lemley, *Private Property*, 52 STAN. L. REV. 1125, 1151–70 (2000). The European Union, for example, has concluded that processing leading to new inferences about a person falls under the EU's General Data Protection Regulation. *See* Natasha Lomas, *Sensitive Data Ruling by Europe's Top Court Could Force Broad Privacy Reboot*, TECHCRUNCH (Aug. 2, 2022), https://techcrunch.com/2022/08/02/cjeu-sensitive-data-case/.

454. *See* Own Your Own Data Act, S. 806, 116TH CONG. (2019), https://www.govtrack.us/congress/bills/116/s806.

455. *See* Angelique Carson, *US Lawmakers Consider Whether Your Data Should Be a "Property Right,"* IAPP (Oct. 25, 2019), https://iapp.org/news/a/us-lawmakers-consider-whether-your-data-should-be-a-property-right/.

456. *See* Ryan Barwick, *Where privacy regulation stands ahead of 2023*, MKTG. BREW (Dec. 21, 2022), https://www.marketingbrew.com/stories/2022/12/21/where-privacy-regulation-stands-ahead-of-2023.

457. *See* Pamela Samuelson, *Privacy as Intellectual Property*, 52 STAN. L. REV. 1125, 1127–28 (2000).

458. *See* Cameron F. Kerry & John B. Morris, *Why Data Ownership Is the Wrong Approach to Protecting Privacy*, BROOKINGS (June 26, 2019), https://www.brookings.edu/blog/techtank/2019/06/26/why-data-ownership-is-the-wrong-approach-to-protecting-privacy/.

459. *See supra* note 454.

that consumers are quite likely to trade those rights for access to internet platforms such as Facebook and Twitter.[460] Few users have the time, interest, or expertise to parse the contracts that govern the transfer of rights in personal data.[461] Even if they do examine these agreements it is difficult to value one's own data, particularly if its primary value is generated in combination with data from others.[462] The likelihood that consumers, as initial rights holders in personal data, will transfer those entitlements to dominant internet intermediaries, effectively makes those dominant platforms the true beneficiaries of a customized regime.[463] This shift, combined with the market dominance of five firms as platforms, could lead those companies to support a customized regime that, while seemingly at odds with their financial interests, is actually promoting them.[464] Ironically, if this possibility were to come to pass, it may create a successful customized IP regime—just not for the interest group for whom it was designed.[465]

Fortunately or not, personal data also demonstrates the challenges discussed in this Article's case studies. Proposals for a customized regime in personal data are bogged down by conflicts among interest groups, including smaller internet firms versus dominant ones, and by the challenges of specifying the relevant technologies, particularly with the advent of inferential data and sophisticated machine learning systems.

E. LOOKING TO THE FUTURE

Relying upon a specialized set of rules, rather than more general IP doctrines, may hinder rather than help developing industries. For example, quantum computing is a hot topic among physicists, computer scientists, and legal academics alike. The technology is in a nascent stage; both its promise and perils are likely overstated. But there are already proposals for a specialized

460. *See* Kerry & Morris, *supra* note 458.

461. *Id.*

462. *Id.*

463. *See* Stacy-Ann Elves, *Paying for Privacy and the Personal Data Economy*, 117 COLUM. L. REV. 1369, 1413–19 (2017).

464. *See generally* Emily Birnbaum, *Big Tech Divided and Conquered to Block Key Bipartisan Bills*, BLOOMBERG NEWS (Dec. 20, 2022), https://www.bloomberg.com/news/articles/2022-12-20/big-tech-divided-and-conquered-to-block-key-bipartisan-bills (discussing political power of dominant internet firms).

465. *See* Jian Jia, Ginger Zhe Jin, & Liad Wagman, *The Short-Run Effects of GDPR on Technology Venture Investment*, NBER WORKING PAPER 25248 (Nov. 2018), https://www.nber.org/papers/w25248.

quantum computing IP regime.[466] While the proponents' motives are plainly laudable,[467] endorsing a system where "policy makers should treat quantum as something unique and unprecedented"[468] runs the same set of risks that the SCPA, AHRA, and VHDPA encountered. Moreover, despite the precautionary principle, it is likely too early in quantum computing's development to regulate it effectively.[469] Imposing a new, customized IP system might well generate rules that are quickly obsolete, or that inadvertently shift technological development in a direction more amenable to capturing monopoly rents and less promising for quantum innovation.[470]

Artificial intelligence (AI) is another area where customized IP rules have recently been proposed, albeit with a reversal of the usual political alignment. AI systems such as large language models require large volumes of training data to perform accurately tasks such as natural language inference.[471] Some of this data is protected by copyright law, and some AI developers or consumers train systems on that data without permission.[472] Owners of the copyrighted data have commenced litigation over its use in training datasets;[473] the principal question, since copying appears unquestioned, is whether liability is excused under the fair use doctrine.[474] Data owners and commentators concerned about the unauthorized use of information in AI systems have sought to sidestep the uncertainties of fair use with another proposed IP regime: a federal

466. *See* Mauritz Kop & Mark Brongersma, *Integrating Bespoke IP Regimes for Quantum Technology into National Security Policy*, *available at* https://dx.doi.org/10.2139/ssrn.4095763 (Aug. 8, 2021); Mauritz Kop, *Quantum Computing and Intellectual Property Law*, 25 BERK. TECH. L.J. 101 (2021).

467. *See* Kop, *supra* note 466, at 112–13 (describing concerns about overprotection of IP regimes).

468. *See* Kop & Brongersma, *supra* note 466.

469. *See generally* James McKenzie, *When Will Quantum Computers Finally Break Into The Market?*, PHYSICS WORLD (Apr. 3, 2023), https://physicsworld.com/a/when-will-quantum-computers-finally-break-into-the-market/.

470. *But see* Mateo Aboy, Timo Minssen, & Mauritz Kop, *Mapping the Patent Landscape of Quantum Technologies: Patenting Trends, Innovation and Policy Implications*, 53 IIC – INT'L REV. INTELL. PROP. & COMPETITION L. 853 (2022) (suggesting that disclosures from quantum computing patents increasingly create an information commons).

471. *See* Mark A. Lemley & Bryan Casey, *Fair Learning*, 99 TEX. L. REV. 743, 745–46, 750–54 (2021).

472. *See id.* at 747–49; James Vincent, *The Lawsuit That Could Rewrite the Rules of AI Copyright*, VERGE (Nov. 8, 2022), https://www.theverge.com/2022/11/8/23446821/microsoft-openai-github-copilot-class-action-lawsuit-ai-copyright-violation-training-data.

473. *See* Vincent, *supra* note 472*; see* Mark A. Lemley, *How Generative Copyright Turns Copyright Upside Down* 2, https://dx.doi.org/10.2139/ssrn.4517702 (Aug. 4, 2023).

474. *See* Lemley & Casey, *supra* note 471, at 760–76.

right of publicity,[475] for which the software company Adobe has coined the term "federal anti-impersonation right."[476] A bipartisan group of Senators[477] has responded with the proposed NO FAKES Act,[478] which creates an entitlement similar to state rights of publicity against digital replication of one's persona during their lifetime or for seventy years after their death. The legislation, which remains in draft form, has received a mixed response thus far.[479]

The precise contours of such a federal entitlement are unknown at this point, since there have not even been specific proposals yet.[480] If a federal right were modeled on various states' rights of publicity, both statutory and common law, it would cover far more activity than just use in AI training data.[481] However, at present, the federal right of publicity is being discussed almost exclusively in the context of placing limits on AI training data.[482] Depending on how (and whether) the concept develops, such a federal right

475. *See* Jennifer E. Rothman, *Federal Right of Publicity Takes Center Stage in Senate Hearing on AI*, ROTHMAN'S ROADMAP TO THE RIGHT OF PUBLICITY (July 27, 2023), https://rightofpublicityroadmap.com/news_commentary/federal-right-of-publicity-takes-center-stage-in-senate-hearing-on-ai/.

476. *See* Dennis Crouch, *A National Right of Publicity: The Federal Anti-Impersonation Right (FAIR)*, PATENTLY-O (July 19, 2023), https://patentlyo.com/patent/2023/07/national-publicity-impersonation.html; Brandon Lyttle, *Adobe Urges Lawmakers To Penalize Individuals Who Use AI To Mimic Other Artist Styles*, NICHE GAMER (July 13, 2023), https://nichegamer.com/adobe-urges-lawmakers-to-penalize-individuals-who-use-ai-to-mimic-other-artist-styles/.

477. *See* NURTURE ORIGINALS, FOSTER ART, AND KEEP ENTERTAINMENT SAFE (NO FAKES) ACT, https://www.coons.senate.gov/imo/media/doc/no_fakes_act_one_pager.pdf (last visited Nov. 27, 2023).

478. *See* Senate Legislative Counsel, Draft Copy of EHF23968, https://rightofpublicityroadmap.com/wp-content/uploads/2023/10/2023.10.12-no_fakes_act_draft_text-EHF23968.pdf [hereinafter NO FAKES Act of 2023]; *see generally The Right of Publicity in the AI Age*, QUINN EMANUEL (Oct. 2, 2023), https://www.quinnemanuel.com/the-firm/publications/the-right-of-publicity-in-the-ai-age/. One admires the circumlocutions necessary to arrive at such a pithy acronym.

479. *See* Jennifer E. Rothman, *Draft Digital Replica Bill Risks Living Performers' Rights over AI-Generated Replacements*, ROTHMAN'S ROADMAP TO THE RIGHT OF PUBLICITY (Oct. 20, 2023), https://rightofpublicityroadmap.com/news_commentary/draft-digital-replica-bill-risks-living-performers-rights-over-ai-generated-replacements/; *but see* Ethan Millman, *New Senate Bill Seeks to Protect Artists from AI Deepfakes*, ROLLING STONE (Oct. 12, 2023), https://www.rollingstone.com/music/music-news/new-senate-bill-protect-artists-from-ai-deepfakes-1234852744/.

480. *See* Rothman, *supra* note 475.

481. *See generally* Robert Post & Jennifer E. Rothman, *The First Amendment and the Right(s) of Publicity*, 130 YALE L.J. 86 (2020); Stacey L. Dogan & Mark A. Lemley, *What the Right of Publicity Can Learn from Trademark Law*, 58 STAN. L. REV. 1161 (2006); Michael Madow, *Private Ownership of Public Image: Popular Culture and Publicity Rights*, 81 CAL. L. REV. 125 (1993).

482. *See* Rothman, *supra* note 475.

could form a new type of customized IP regime: one that applies to a specific industry, such as software developers of artificial intelligence systems, but that is designed to hobble rather than bolster that industry. This inverts the typical political arrangement, as the affected industry has little to no effect on the configuration of the new regime. And it switches the risks of this customized IP regime variant; the concern is not that the affected industry will gain too much power or wealth but too little, thereby potentially inhibiting socially beneficial development of AI technologies.[483]

VI. CONCLUSION

Customized intellectual property regimes have enduring appeal despite their history of failing to deliver anticipated benefits to interest groups. That history suggests that new proposals to craft effective bespoke regimes will prove difficult to accomplish, even when advocates can draw upon popular but distasteful political suspicion of foreign competitors. It is easy for coalitions to break down and for business models to change in ways that are challenging to foresee. This may be both a cautionary tale for the interest groups who want special rules, and a happy one for legislators and larger social interests concerned about the adverse effects of laws that enable rent-seeking.

This pattern also has implications for the debate over the desirability of generalized or tailored intellectual property systems. It illustrates a risk of the tailored approach: capture of the drafting process by interest groups may lead to the instantiation of a customized system rather than a tailored one. And yet, customized IP regimes are not the nightmare of public choice theory because their parasitism is largely ineffective. However, they also fail to achieve the stated goals of tailored systems since they produce little incentive to innovate. Even though interest groups get the rules they asked for, neither they nor the larger public receive the desired benefits. The paradox of customized IP regimes is thus a cautionary tale in the governance of innovation.

483. *See* Corynne McSherry, *A Broad Federal Publicity Right Is a Risky Answer to Generative AI Problems*, EFF (July 18, 2023), https://www.eff.org/deeplinks/2023/07/broad-federal-publicity-right-risky-answer-generative-ai-problems.

VII. APPENDIX A: IP LEGISLATION METHODOLOGY

To assemble the initial list of contenders for IP-relevant legislation, we created a master list of all legislation passed from the 92nd Congress to the 117th Congress that contained related keywords. We searched Congress.gov for one of ten terms: intellectual property, trademark, copyright, patent, trade secret, industrial design, infringement, Title 17, Title 35, or Title 15. Then, we downloaded CSV files of all bills that were passed into legislation during these Congresses. These lists were compiled into one large list by copying and pasting them into one document. Duplicates were removed by sorting all columns by legislation number, then Congress, then title. Nested "if" statements were then used to command Excel to propagate the next column over with either the legislation number, or with a blank cell if the legislation number and congress number were identical to the row above. An example is =IF(A1=A2,IF(B1=B2,"",A2),A2). This new column could then be copied and pasted into the next column over as plain numbers rather than equations. Then, the Excel sheet was sorted by this new column and all rows with blank cells were identified as duplicates and deleted. This provided a master list of all legislation passed containing one or more of the ten keywords, but that did not reflect which keywords were present in each bill. The master list had the same number of results (1229) as doing a search for all keywords using OR statements in Congress.gov, allowing us to verify our results by using two different methods.[484]

Next, we compared a list of legislation for each individual keyword to the master list. We did this by concatenating the legislation number and congress into one unique cell in both the master list and each keyword list. We then commanded Excel to identify any exact matches in the concatenated lists by filling in the keyword of interest; any rows that had no match were filled with #N/A. This was done using the vlookup function. An example is =VLOOKUP(G2,'intellectual property'!E:F,2,FALSE). This was done for each keyword. The resulting list was then compared to a list that had been manually compiled for the key terms "intellectual property," "trademark," and "copyright" to confirm that the program was working accurately.

Finally, we analyzed whether these laws created customized IP regimes. We checked the text of 34.9% of such laws to assess whether the legislation met this Article's criteria. We did not find any laws apart from the SCPA, AHRA, and VDHPA that resulted in customized IP regimes of any significant

484. For a complete version of the spreadsheet, see https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4548113.

size (in contrast, for example, to creating rights in the term "National Tropical Botanical Garden").[485]

485. *See supra* note 47.