

# STANDING IN THE SHADOWS OF GIANTS: THE ROLE OF INTERGENERATIONAL EQUITY IN TELECOMMUNICATIONS REFORM

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## I. IN THE LAND OF MORDOR WHERE THE SHADOWS LIE

Technological progress isn't everything; it's the only thing. This battle cry of the "new economy" applies with special force to telecommunications. The Telecommunications Act of 1996<sup>1</sup> promised that deregulation would not only "secure lower prices and higher quality services" but also "encourage the rapid de-

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1. Pub. L. No. 104-104, 110 Stat. 56 (codified as amended in scattered sections of 15, 18 and 47 U.S.C.).

ployment of new telecommunications technologies."<sup>2</sup> Consistent with the broader "policy of the United States to encourage the provision of new technologies and services to the public,"<sup>3</sup> the Federal Communications Commission ("FCC") must honor a mandate "to promote . . . policies and purposes . . . favoring diversity of media voices, vigorous economic competition, [and] technological advancement."<sup>4</sup>

Talk, alas, is cheap. In regulated industries as in intellectual property, "[n]ew technology is the easy answer to everything."<sup>5</sup> As if to make this "ritual" even more "trivial,"<sup>6</sup> legal scholars repeatedly describe technological progress through the metaphor of "standing on the shoulders of giants."<sup>7</sup> But even the most hackneyed cliché has a kernel of truth. The hottest debates in contemporary telecommunications law involve seemingly dissimilar approaches to technological transitions. Telecommunications law is now confronting the intractable problem of generations. Being "dramatically aware of a process of destabilization," the young often "take sides" in current conflicts, while members of "the older generation cling to the re-

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2. *Id.* at 56 (preamble).

3. 47 U.S.C. § 157(a) (Supp. III 1997); *accord, e.g.*, Time Warner Ent. Co., 8 F.C.C.R. 7106, 7107-08 (1993).

4. *Id.* § 257(b) (Supp. III 1997). *But see* Joseph Farrell, *Creating Local Competition*, 49 FED. COMM. L.J. 201, 211 (1996) ("How can an Act that says 'shall' 2,036 times be deregulatory?")

5. Thomas W. Hazlett, *Predation in Local Cable TV Markets*, 40 ANTITRUST BULL. 609, 643 (1995) ("New technology is the easy answer to everything.")

6. *See* Thomas G. Krattenmaker & L.A. Powe, Jr., *Converging First Amendment Principles for Converging Communications Media*, 104 YALE L.J. 1719, 1719 (1995).

7. *See, e.g.*, *In re Alappat*, 33 F.3d 1526, 1553 (Fed. Cir. 1994); *White v. Samsung Elecs. Am., Inc.*, 989 F.2d 1512, 1515 (9th Cir. 1993) (Kozinski, J., dissenting from denial of rehearing en banc); *Whelan Assocs., Inc. v. Jaslow Dental Laboratory, Inc.*, 797 F.2d 1222, 1238 (3d Cir. 1986); *In re Bergt*, 241 B.R. 17, 29 (D. Alaska 1999); *Lotus Dev. Corp. v. Paperback Software Int'l*, 740 F. Supp. 37, 77 & n.3 (D. Mass. 1990); Zachariah Chafee, Jr., *Reflections on the Law of Copyright*, 45 COLUM. L. REV. 503, 533 (1945); Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. ECON. PERSP. 29 (1991); Bradley W. Grout, Note, *Wobbling on the Shoulders of Giants: The Supreme Court's Failure in Lotus v. Borland*, 4 J. INTELL. PROP. L. 77 (1997); *cf.* OASIS, *STANDING ON THE SHOULDERS OF GIANTS* (Amy Records 2000) (extending the metaphor into the realm of rock 'n' roll). *See generally* ROBERT K. MERTON, *ON THE SHOULDERS OF GIANTS: A SHANDEAN POSTSCRIPT* (1965) (tracing the origins of this metaphor in a letter from Isaac Newton to Robert Hooke).

orientation that had been the drama of *their* youth.”<sup>8</sup> Or as Pete Townshend would characterize the debate: “Why don’t y’all just fade away? Don’t try and dig what we all say.”<sup>9</sup>

What is true of telecommunications as an industry is also true of its governing legal doctrines. Anything that matters is grand in scale.<sup>10</sup> The field of combat, traditionally described in static economic terms, now crosses temporal boundaries. In one corner, incumbent monopolists demand some form of reimbursement for expectations undermined by deregulation. Whether cast as legislative relief or judicially mandated just compensation for “deregulatory takings,” stranded cost recovery is all the rage in the debate over local competition. In an opposing corner, the Telecommunications Act explicitly defines universal service to include a progressively “evolving level” of advanced services for an expanded list of beneficiaries.<sup>11</sup> One of traditional public utility law’s hoariest precepts meets the internet age.

This article addresses the role of intergenerational equity in telecommunications reform. Part II examines two specific controversies through the lens of intergenerational justice. Stranded cost recovery and expanded universal service support should be analyzed as explicit wealth transfers across generational lines. These policies reflect deep disagreement over how telecommunications law can best reconcile claims by competing generations and thereby discharge the “awful responsibility of time.”<sup>12</sup> Stranded cost recovery proceeds from the assumption that future investors will abandon the telecommunications industry unless past investors are fully compensated in response to regulatory change. By contrast, the law has been expanding the definition of universal service in response to a fear that the “digital divide” will pit wealthy consumers against their poorer, younger counterparts.

Despite their opposite temporal orientations, stranded cost recovery and universal service support share a common link.

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8. KARL MANNHEIM, *The Problem of Generations*, in *ESSAYS ON THE SOCIOLOGY OF KNOWLEDGE* 276, 301 (Paul Keschemiti ed., 1952) (emphasis added).

9. THE WHO, *My Generation*, on *THE KIDS ARE ALRIGHT* (UNI/MCI 1979).

10. Cf. Jim Chen, *Titanic Telecommunications*, 25 SW. U. L. REV. 535, 551 (1996) (“Expect only one type of [competitor]: big.”)

11. See 47 U.S.C. § 254(c)(1) (Supp. III 1997).

12. See ROBERT PENN WARREN, *ALL THE KING’S MEN* 464 (1946).

Both policies reflect the command-and-control assumption that "[m]ere[ ] . . . competition," in an "industry so regulated and so largely closed," will not spur investment and innovation.<sup>13</sup> Stranded cost and universal service provisions, for radically different reasons, adopt a regulatory attitude that is more reminiscent of the unitary Bell System than it is consonant with the deregulatory ambitions of the Telecommunications Act. AT&T's legendary slogan echoes still: "One Policy, One System, Universal Service."<sup>14</sup> Public utility law is dead; long live public utility law:

One Ring to rule them all, One Ring to find them,  
One Ring to bring them all and in the darkness bind  
them . . . .<sup>15</sup>

Telecommunications law indeed has "giants," but not necessarily the sort whose shoulders promote inexorable advance through invention and innovation. Rather, the brooding omnipresence of the public utility past and the unfulfilled promise of a deregulatory future cast long shadows across the face of telecommunications policy.<sup>16</sup> The common strain in stranded cost recovery, universal service support, and even plain vanilla deregulation is an intense public desire to foster innovation. The law seeks technological progress in order to enrich tomorrow's generations—to liberate them from material and political constraints faced by their forebears.<sup>17</sup>

Part III enlists outside help in an effort to complete telecommunications law's unfulfilled quest for intergenerational justice. So stark is the internal conflict within telecommunica-

13. *FCC v. RCA Communications, Inc.*, 346 U.S. 86, 97 (1953); *accord, e.g.*, *Hawaiian Tel. Co. v. FCC*, 498 F.2d 771, 776 (D.C. Cir. 1974).

14. MICHAEL K. KELLOGG ET AL., *FEDERAL TELECOMMUNICATIONS LAW* § 1.3, at 12 (1992) (quoting AT&T chairman Theodore Vail); *see also* Milton Mueller, *Universal Service in Telephone History: A Reconstruction*, 17 *TELECOMMS. POL'Y* 352, 353-57 (1993) (characterizing Vail's slogan as the basis for a business strategy to extend the market reach of the Bell System to its economic limits).

15. J.R.R. TOLKIEN, *THE FELLOWSHIP OF THE RING* 3 (2d ed. 1965); *hear also* LED ZEPPELIN, *Ramble On*, on LED ZEPPELIN 2 (Classic Records 1969) ("Twas the darkest depths of Mordor / I met a girl so fair, / But Gollum and the Evil One / Crept up and slipped away with her.")

16. *Cf.* Daniel A. Farber & Paul A. Hemmersbaugh, *The Shadow of the Future: Discount Rates, Later Generations, and the Environment*, 46 *VAND. L. REV.* 267 (1993).

17. *See generally* ITHIEL DE SOLA POOL, *TECHNOLOGIES OF FREEDOM* (1983).

tions that policymakers may be overlooking superior solutions. The “innovation markets” debate, so far more prominent in antitrust law and scholarship than its regulatory counterparts, provides the basic theoretical model. The American experience with the deregulation of electric power production sheds practical light on the problem. Together, theory and practice support a simpler, “third-best” solution that probably would outperform either stranded cost recovery or universal service. Of its own force, deregulation promotes technological innovation by accelerating entry and dissolving legally sheltered monopolies.

Part IV concludes that telecommunications law can and should adopt a consciously progressive posture toward technological innovation and the interests of future generations. Telecommunications disputes should be resolved so that future consumers are systematically favored *vis-à-vis* past investors. Telecommunications law’s ubiquitous “public interest” standard should reflect a forward-looking concern with intergenerational equity.

The extent to which telecommunications law and scholarship have ignored the intergenerational perspective serves as a bitter indictment of the field. The political economy of reputation admittedly constrains the ability of legislators and regulators to protect future consumers.<sup>18</sup> That legal commentators have overlooked the issue, however, is less excusable. Intergenerational wealth transfers are proceeding apace in telecommunications, and the collective silence of putatively neutral observers “bodes ill” for the grand academic mission of combating “the iron triangle of self-serving industries, uninformed legislators, and captured bureaucrats.”<sup>19</sup>

A field so rich in passion and vision need not, ought not abdicate its responsibility. Telecommunications law is witnessing “[t]he proliferation of competing articulations, the willingness to try anything, the expression of explicit discontent, the recourse to philosophy and to debate over fundamentals”—in short, all of the usual signs of crisis and catastrophic reimagination.<sup>20</sup> The “paradigm changes” sweeping through

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18. See generally George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3 (1971).

19. Jim Chen, *Regulatory Education and Its Reform*, 16 YALE J. ON REG. 145, 145 (1999).

20. THOMAS S. KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* 91 (2d ed. 1970).

telecommunications and its regulation strengthen as never before the case for integrating an explicitly intergenerational perspective.<sup>21</sup>

## II. TELECOMMUNICATIONS LAW ACROSS THE GENERATIONS

Intergenerational warfare in telecommunications law is raging along no fewer than three fronts. Stranded costs and universal service have fueled so much controversy that these policies may be regarded as telecommunications law's two towers. I propose to open a third theater of combat by extending the "innovation markets" debate from its familiar moorings in antitrust law and scholarship to telecommunications. Cognizant that "regulatory measures are temporary expedients, not eternal verities,"<sup>22</sup> I shall defer a broader discussion of intergenerational justice until I have laid a solid doctrinal foundation.<sup>23</sup>

Dynamism dominates this debate. Neither stranded cost recovery nor universal service support—at least in their current form—can survive complete deregulation. The "great transformation" of regulated industries law, no less influential in telecommunications than in natural gas or electricity, would otherwise force cross-subsidies and universal service obligations either to blend into tax-based systems of public finance or to disappear altogether.<sup>24</sup>

Alas, "[t]he evil that men do lives on after them; / The good is oft interred with their bones."<sup>25</sup> Despite substantial deregulation, stranded cost recovery and universal service support

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21. See generally Phil Weiser, *Paradigm Changes in Telecommunications Regulation*, 71 U. COLO. L. REV. 819 (2000).

22. Federal Power Comm'n v. East Ohio Gas Co., 338 U.S. 464, 489 (1950) (Jackson, J., dissenting).

23. Cf. Daniel A. Farber, *Legal Pragmatism and the Constitution*, 72 MINN. L. REV. 1331, 1347 (1988) ("Like all other questions, the question of how to promote a flourishing society [should] be answered as much by experience [as by] theory.").

24. See Joseph D. Kearney & Thomas W. Merrill, *The Great Transformation of Regulated Industries Law*, 98 COLUM. L. REV. 1323, 1364 (1998); see also Texas Office of Pub. Util. Counsel v. FCC, 183 F.3d 393, 406 (5th Cir. 1999) ("For obvious reasons, [a] system of implicit subsidies [such as universal service support] can work well only under regulated conditions."); Farrell, *supra* note 4, at 213 ("Cross-subsidies are the enemy of competition, because competition is the enemy of cross-subsidies." (internal quotation marks omitted)).

25. WILLIAM SHAKESPEARE, JULIUS CAESAR act III, sc. ii, in THE YALE SHAKESPEARE 959 (Wilbur L. Cross & Tucker Brooke eds., 1993) (lines 78–80).

persist. Indeed, at least one court has predicated the latter upon the former. In upholding a statute compensating electric utilities for their stranded costs, a Pennsylvania court reasoned that universal service, especially service “of last resort” and service to “low-income segments of [the] population,” depended on the utilities’ ability to recover investments in building and maintaining the state’s “transmission and distribution networks.”<sup>26</sup> Such reasoning ignores the fundamental distinction between these practices. The wealth transfers effected by stranded cost recovery and universal service cross generational lines in squarely opposite directions.

### A. *The Dead Hand: Stranded Cost Recovery*

Stranded cost controversies involve a debate over the fundamental premises of deregulation. In this respect, the Telecommunications Act is no different from other efforts at regulatory reform. Under what Kenneth Starr has described as a “compact of sorts,” utility shareholders historically received protection from competition and “a level of stability in earnings and value” so that the government could promise consumers “universal, non-discriminatory service and protection from monopolistic profits.”<sup>27</sup> No franchise, the public utility model assumes, no investment. Unless the government can pledge “that any competitive advantage deriving from [a firm’s] innovations will [not] be dissipated” by open entry, no one “can . . . guarantee that firms will undertake the investment necessary to produce complex technological innovations.”<sup>28</sup> The “disincentives for new investment and for innovation in telecommunica-

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26. *Indianapolis Power & Light Co. v. Pennsylvania Pub. Util. Comm’n*, 711 A.2d 1071, 1085–86 (Pa. Commw. Ct. 1998); see also *In re Passaic County Utils. Auth. Petition*, 728 A.2d 323, 327 (N.J. Super. Ct. 1999) (describing stranded costs as having been incurred not only “to build infrastructure” but also “to assure universal access”).

27. *Jersey Cent. Power & Light Co. v. Federal Energy Reg. Comm’n*, 810 F.2d 1168, 1189 (D.C. Cir. 1987) (Starr, J., concurring) (emphasis added); cf. Jim Rossi, *The Common Law “Duty to Serve” and Protection of Consumers in an Age of Competitive Retail Public Utility Restructuring*, 51 VAND. L. REV. 1233, 1242–43 (1998) (describing the regulatory contract as the outgrowth of a statutory “duty to serve” under twentieth century public utility statutes from “an ancient common law duty”).

28. *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 429 (1999) (Breyer, J., concurring in part and dissenting in part).

tions<sup>29</sup> or any other capital-intensive, high-risk endeavor, so it is said, will fall most heavily on incumbent firms. This defense of franchising and entry regulation should be quite familiar. Despite the obvious tension with competitive ideals,<sup>30</sup> intellectual property in general and patents in particular can be justified as measures to preserve incentives to invest.<sup>31</sup>

But the law of regulated industries has reversed its historical preference for intangible property over robust competition. In many industries, command-and-control rules have devolved into a more limited body of duties to interconnect with rivals on a nondiscriminatory basis and to conduct business with customers on an unbundled basis. Among the many losers in this transition, incumbent utility companies will pay the stiffest price.<sup>32</sup> “[S]tranded costs” stem directly from the “shift in utility rate philosophy from [traditional] rate design based on ‘cost plus rate of return’ to a market-driven rate.”<sup>33</sup> The “introduction of open access” to existing networks and the ensuing loss of customers to new entrants will drain revenue from in-

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29. Jerry A. Hausman & J. Gregory Sidak, *A Consumer-Welfare Approach to the Mandatory Unbundling of Telecommunications Networks*, 109 YALE L.J. 427, 458 (1999).

30. See generally MORTON J. HORWITZ, *THE TRANSFORMATION OF AMERICAN LAW: 1780–1860* at 109–39 (1977) (describing the jurisprudential tension between property and contract in American legal history); Deborah A. Ballam, *The Evolution of the Government-Business Relationship in the United States: Colonial Times to Present*, 31 AM. BUS. L.J. 553, 557–67 (1994) (same, with a focus on colonial-era contract and property law).

31. See, e.g., *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984); *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975); cf. Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989 (1997) (assessing patent law as a compromise between providing incentives to invent and preserving competition); Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839 (1990) (same). See generally Rebecca S. Eisenberg, *Patents and the Progress of Science: Exclusive Rights and Experimental Use*, 56 U. CHI. L. REV. 1017, 1024–44 (1989) (outlining different rationales for patent law).

32. See, e.g., *North Am. Natural Resources, Inc. v. Michigan Pub. Serv. Comm’n*, 41 F. Supp. 2d 736, 740 (W.D. Mich. 1998) (describing stranded costs as “costs incurred in the transition from monopoly status to competitive market status”); cf. *Massachusetts Inst. of Tech. v. Massachusetts Dep’t of Pub. Utils.*, 941 F. Supp. 233, 235 (D. Mass. 1996) (describing stranded costs as “the investment in existing facilities which may be unrecovered when a [public utility] customer discontinues all-requirement purchases”).

33. *Association of Pub. Agency Customers, Inc. v. Bonneville Power Admin.*, 126 F.3d 1158, 1180 (9th Cir. 1997).

cumbents.<sup>34</sup> Investments that were prudent when made, “normally . . . recovered through charges to customers” rendered captive by conventional restrictions on entry and exit, cannot be recouped once “rates are forced down to market levels.”<sup>35</sup> Economically speaking, it matters not whether it is “actual competition or [a regulatory] proxy” that lowers rates.<sup>36</sup>

Roughly a decade before the Telecommunications Act, federal courts began framing the legal debate over stranded costs. Ratemaking agencies may account for opportunity costs in general<sup>37</sup> and for stranded costs in particular.<sup>38</sup> For instance, the D.C. Circuit allowed the Federal Energy Regulatory Commission (“FERC”) to require purchasers of natural gas to absorb take-or-pay losses incurred by interstate pipelines, in exchange for the imposition of unbundling and open access rules on those pipelines.<sup>39</sup> On the other hand, an agency that ignores stranded costs must supply some explanation.<sup>40</sup> A regulated firm is entitled to a hearing at which it can present evidence that the denial of stranded cost recovery would result in confiscatory ratemaking.<sup>41</sup>

Before 1996, however, no court or commentator had identified a statutory, common law, or constitutional principle dic-

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34. See *Cajun Elec. Power Coop., Inc. v. Federal Energy Reg. Comm'n*, 28 F.3d 173, 175 (D.C. Cir. 1994).

35. *Public Serv. Co. v. Patch*, 167 F.3d 15, 19 n.3 (1st Cir. 1998), *cert. denied*, 119 S. Ct. 1458 (1999).

36. *Id.*

37. See *City of Los Angeles Dep't of Airports v. United States Dep't of Transp.*, 103 F.3d 1027, 1032 (D.C. Cir. 1997); *Pennsylvania Elec. Co. v. Federal Energy Reg. Comm'n*, 11 F.3d 207, 209–11 (D.C. Cir. 1993); *cf. City of Los Angeles v. United States Dep't of Transp.*, 165 F.3d 972, 978 (D.C. Cir. 1999) (holding that an agency may but need not take opportunity costs into account), *cert. denied*, 120 S. Ct. 786 (2000).

38. See, e.g., *Public Agency Customers*, 126 F.3d at 1180–82; *cf. United Distrib. Cos. v. Federal Energy Reg. Comm'n*, 88 F.3d 1105, 1178–80 (D.C. Cir. 1996) (holding that the regulatory doctrine of awarding a rate of return solely on property “used and useful” in the actual provision of utility service does not necessarily forbid regulatory consideration of stranded costs).

39. See, e.g., *Western Resources, Inc. v. Federal Energy Reg. Comm'n*, 72 F.3d 147, 152 (D.C. Cir. 1995); *Elizabethtown Gas Co. v. Federal Energy Reg. Comm'n*, 10 F.3d 866, 873–74 (D.C. Cir. 1993); *Public Util. Comm'n v. Federal Energy Reg. Comm'n*, 988 F.2d 154, 169 (D.C. Cir. 1993); *K N Energy, Inc. v. Federal Energy Reg. Comm'n*, 968 F.2d 1295, 1301 (D.C. Cir. 1992).

40. See *Associated Gas Distribs. v. Federal Energy Reg. Comm'n*, 824 F.2d 981, 1021–23 (D.C. Cir. 1987) *cert. denied*, 485 U.S. 1006 (1988).

41. See *Jersey Cent. Power & Light Co. v. Federal Energy Reg. Comm'n*, 810 F.2d 1168, 1181–82 (D.C. Cir. 1987) (en banc).

tating stranded cost recovery in all circumstances. If anything, the leading stranded costs precedent on the eve of comprehensive telecommunications reform counseled against mortgaging future competition in the rush to compensate incumbent monopolists. In FERC's initial effort to address stranded costs in the electricity industry, the D.C. Circuit invalidated FERC's decision to saddle new entrants with the bulk of their incumbent competitors' stranded costs.<sup>42</sup>

Nor did *United States v. Winstar Corp.*<sup>43</sup> change the legal terrain. Decided the summer after passage of the Telecommunications Act, *Winstar* held the federal government responsible for violating an express agreement "to indemnify its contracting partners against financial losses arising from regulatory change."<sup>44</sup> Without reaching consensus on a precise, binding legal rationale, a majority of Justices concluded that Congress had breached the Federal Home Loan Bank Board's promise of favorable accounting treatment for certain savings and loan institutions. By contrast, neither telecommunications nor any other industry regulated under the traditional public utility model has proceeded under such a contract.<sup>45</sup> Both the Telecommunications Act and the integrated body of state and federal laws preceding it represented general legislation "designed to spread the costs of a societal problem"—namely, the prevalence of monopoly in local telephony—rather than a contractual arrangement between specific private firms and the government.<sup>46</sup> In any event, every opinion in *Winstar* reaffirmed the longstanding rule requiring the narrow interpretation of contracts purporting to impugn the government's sovereign powers:

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42. See *Cajun Elec. Power Coop., Inc. v. Federal Energy Reg. Comm'n*, 28 F.3d 173, 177–80 (D.C. Cir. 1994).

43. 518 U.S. 839 (1996).

44. *Id.* at 887 (plurality opinion).

45. See Herbert Hovenkamp, *The Takings Clause and Improvident Regulatory Bargains*, 108 YALE L.J. 801, 821 (1999) (arguing that the law of economic regulation, generally speaking, abandoned company-by-company charters in favor of broad statutes authorizing an expert agency to regulate entire industries in the public interest); cf. *Winstar*, 518 U.S. at 860–61 (plurality opinion) (acknowledging the need to identify the existence of an agreement between private parties and the government).

46. *Yankee Atomic Elec. Co. v. United States*, 112 F.3d 1569, 1576 & n.6 (Fed. Cir. 1997), *cert. denied*, 524 U.S. 951 (1998).

[A] contract with a sovereign government will not be read to include an unstated term exempting the other contracting party from the application of a subsequent sovereign act . . . , nor will an ambiguous term of a grant or contract be construed as a conveyance or surrender of a sovereign power.<sup>47</sup>

In all, the case for stranded cost recovery in telecommunications seemed dead until the introduction of a legal phrase that was as felicitous as it was fallacious: “deregulatory takings.”<sup>48</sup> In a controversial 1997 book, J. Gregory Sidak and Daniel F. Spulber argued that deregulation breaches a supposed “regulatory contract” between public utility companies and the government.<sup>49</sup> The proper remedy for this disappointment of public utility shareholders’ reasonable investment-backed expectations, argued Sidak and Spulber, should be just compensation under the takings clause of the United States Constitution.<sup>50</sup>

The theory of deregulatory takings, longer on rhetoric than on legal reasoning,<sup>51</sup> grew out of incumbent local exchange companies’ (“ILECs”) frustration with the deregulatory impact of the Telecommunications Act and the FCC’s implementing rules. In the natural gas and electricity industries, stranded cost recovery is *de rigueur*; the real debate is not whether stranded costs should be recovered, but to what extent, and by

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47. *Winstar*, 518 U.S. at 878 (plurality opinion); see also *id.* at 918 (Breyer, J., concurring) (noting the need to “underscore[ ] the special circumstances that [are] required to convince [a] [c]ourt of the existence of a claimed promise”); *id.* at 921 (Scalia, J., concurring in the judgment) (“Governments do not ordinarily agree to curtail their sovereign or legislative power, and contracts must be interpreted in a commonsense way against that background understanding.”); *id.* at 926 (Rehnquist, C.J., dissenting) (“[A] waiver of sovereign authority will not be implied, but instead must be surrendered in unmistakable terms.”).

48. The phrase “deregulatory takings” did not appear in a published federal judicial opinion before 1998, and then only through citations to works by J. Gregory Sidak and Daniel F. Spulber. See *Bell Atl. Corp. v. United States*, 82 A.F.T.R.2d ¶ 98-7375, at 98-5606 (E.D. Pa. 1998); *Gulf Power Co. v. United States*, 998 F. Supp. 1386, 1394–95 (N.D. Fla. 1998); see also Jim Rossi, *The Irony of Deregulatory Takings*, 77 TEX. L. REV. 297, 314 (1998) (observing that *Gulf Power* “does not address the stranded cost issue posed by deregulation”).

49. See J. GREGORY SIDAK & DANIEL F. SPULBER, *DEREGULATORY TAKINGS AND THE REGULATORY CONTRACT: THE COMPETITIVE TRANSFORMATION OF NETWORK INDUSTRIES IN THE UNITED STATES* (1997).

50. See *id.* at 213–81.

51. See Jim Chen, *The Second Coming of Smyth v. Ames*, 77 TEX. L. REV. 1535 (1999); Hovenkamp, *supra* note 45, at 805–21; Rossi, *supra* note 48, at 306–10.

what means, and from whom. By contrast, the Telecommunications Act was silent on the issue. The FCC completed the rout by adopting open access and unbundled pricing rules that compromised the ILECs' ability to recover the cost of building and maintaining their wireline networks. Unable to secure either legislative or administrative relief, the ILECs resorted to litigation. As the Bell operating companies would later confirm in their ill-fated "bill of attainder" attacks on the Telecommunications Act,<sup>52</sup> the ILECs evidently trusted the allure of a novel constitutional theory to help them sneak stranded cost recovery through the courtroom door.

The local competition provisions of the 1996 Act unleashed the specter of stranded costs in telecommunications. The Act promised comprehensive reform of the "access charges" that interexchange carriers ("IXCs") must pay local carriers for "last-mile" completion of long-distance calls.<sup>53</sup> Moreover, the Act gave IXCs and other would-be competitive local exchange carriers ("CLECs") the right to buy selected network elements<sup>54</sup> from ILECs<sup>55</sup> at reasonable prices.<sup>56</sup> Prices for unbundled access effectively dictate the terms of competitive entry, for no one seriously believes that any CLEC in the short run can duplicate an incumbent network from scratch.<sup>57</sup> "The issue, then,

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52. See *BellSouth Corp. v. FCC*, 162 F.3d 678 (D.C. Cir. 1998), *cert. denied*, 119 S. Ct. 1495 (1999); *SBC Communications, Inc. v. FCC*, 154 F.3d 226 (5th Cir. 1998), *cert. denied*, 119 S. Ct. 889 (1999); *BellSouth Corp v. FCC*, 144 F.3d 58 (D.C. Cir. 1998), *cert. denied*, 119 S. Ct. 1495 (1999). See generally Jim Chen, *The Magnificent Seven: American Telephony's Deregulatory Shootout*, 50 HASTINGS L.J. 1503 (1999) (describing the bill of attainder litigation as a factor affecting telecommunications mergers since 1996).

53. See generally *Southwestern Bell Tel. Co. v. FCC*, 153 F.3d 523 (8th Cir. 1998), *affg In re Access Charge Reform*, 11 F.C.C.R. 21,354 (1996).

54. The term "network element" refers to "facilit[ies] or equipment used in the provision of a telecommunications service." 47 U.S.C. § 153(29) (Supp. III 1997); see also *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 386-87 (1999) (upholding the FCC's expansive interpretation of this statutory definition).

55. See 47 U.S.C. § 251(c) (Supp. III 1997).

56. See *id.* § 252(d).

57. See, e.g., Lawrence A. Sullivan, *Elusive Goals Under the Telecommunications Act: Preserving Long Distance Competition up-on Baby Bell Entry and Attaining Local Exchange Competition: We'll Not Preserve the One Unless We Attain the Other*, 25 SW. U. L. REV. 487, 501-07 (1996) (providing a pessimistic prognosis for facilities-based local competition). But see William C. Beckwith, *Cutting the Cord: Removing the CMRS Spectrum Cap to Promote Wireless-Wireline Convergence and Wireless Alternatives in the Local Loop*, 7 COMMLAW CONSPECTUS 369 (1999) (suggesting that wireless carriers can viably compete against landwire incumbents); J. Gregory Sidak et al., *A General Framework for Competitive Analysis in Wireless*

is a matter of these two interconnection prices: the prices for completion of long-distance messages and the prices for rental of local telephone facilities.<sup>58</sup>

Implementation of the Act compounded deregulation's threat to the incumbent carriers. Six months after the Act's passage, the FCC adopted the Total Element Long-Run Incremental Cost ("TELRIC") rule for pricing the basic unbundled network elements that ILECs would be required to sell to their competitors.<sup>59</sup> Touted as "the most pro-competitive action of government since the break-up of the Standard Oil Trust,"<sup>60</sup> TELRIC struck three blows against the ILECs. First, in pricing network elements, the FCC expressly excluded "[e]mbedded costs . . . that the incumbent LEC incurred in the past" and "[o]ppportunity costs includ[ing] the revenues that the incumbent LEC would have received . . . in the absence of competition."<sup>61</sup> Second, the FCC computed prices based on the cost of "the most efficient telecommunications technology currently available," rather than the cost of actual technology used by an incumbent or deployed by an entrant.<sup>62</sup> Finally, in prescribing proxy prices for state regulators choosing not to follow TELRIC, the FCC allegedly depressed the rates that ILECs may charge competitors for interconnection and unbundled access.<sup>63</sup>

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*Telecommunications*, 50 HASTINGS L.J. 1639 (1999) (same); Eric Thoreson, Comment, *Farewell to the Bell Monopoly? The Wireless Alternative to Local Competition*, 77 OR. L. REV. 309, 336 (1998) (same).

58. William J. Baumol & Thomas W. Merrill, *Does the Constitution Require That We Kill the Competitive Goose? Pricing Local Phone Services to Rivals*, 73 N.Y.U. L. REV. 1122, 1124 (1998).

59. See *In re Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 11 F.C.C.R. 15,499 (1996) (codified at 47 C.F.R. §§ 51.503, 51.505), *aff'd in part, rev'd in part sub nom. AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366 (1999).

60. *Id.* at 16,239 (separate statement of Chairman Hundt).

61. 47 C.F.R. § 51.505(d)(1), (3) (1999); see also E. Sanderson Hoe & Stephen Ruscus, *Taking Aim at the Takings Argument: Using Forward-Looking Pricing Methodologies to Price Unbundled Network Elements*, 5 COMMLAW CONSPPECTUS 231, 239 (1997) (acknowledging but ultimately rejecting the ILECs' objection to TELRIC's failure to permit recovery of prudent investments).

62. 47 C.F.R. § 51.505(b)(1) (1999); cf., e.g., *Burlington N. R.R. v. Surface Transp. Bd.*, 114 F.3d 206, 213 (D.C. Cir. 1997) (upholding the regulatory use of "stand alone cost constraints" based on a hypothetical carrier rather than an actual carrier).

63. See 47 C.F.R. §§ 51.503(b)(2), 51.513, 51.705(a)(2), 51.707 (1999); cf. David Gabel & David I. Rosenbaum, *Who's Taking Whom: Some Comments and Evidence on the Constitutionality of TELRIC*, 52 FED. COMM. L.J. 239, 265-66 (1999) (ac-

During the *Iowa Utilities Board* litigation,<sup>64</sup> in which incumbent carriers and their allies on state public utility commissions contested the FCC's authority to issue TELRIC, a sympathetic Eighth Circuit panel succinctly described the ILECs' pain:

Many of the incumbent LECs complain that the TELRIC method does not incorporate their "historical" or "embedded" costs (costs that an incumbent LEC incurred in the past to build its local network and has not yet recovered under state regulations) into the cost figure that forms the basis for determining the rates that the incumbent LECs may charge. The incumbent LECs argue that the TELRIC method underestimates their costs to provide interconnection and unbundled access and results in prices that are too low, effectively requiring them to subsidize their new local service competitors.<sup>65</sup>

The Eighth Circuit eventually awarded exclusive jurisdiction over network element pricing to the states rather than the FCC.<sup>66</sup> The Supreme Court reversed in relevant part,<sup>67</sup> holding that the FCC had jurisdiction to promulgate TELRIC.<sup>68</sup> The

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knowledging the ILECs' complaint that "state regulatory commissions, trying to keep local rates low, have traditionally dictated artificially lengthy depreciation schedules," but ultimately rejecting this "spurious argument").

64. See generally Jim Chen, *TELRIC in Turmoil, Telecommunications in Transition: A Note on the Iowa Utilities Board Litigation*, 33 WAKE FOREST L. REV. 51, 56-68 (1998) (recounting the early history of this litigation); Duane McLaughlin, Note, *FCC Jurisdiction over Local Telephone Under the 1996 Act: Fenced Off?*, 97 COLUM. L. REV. 2210, 2236-42 (1997) (same).

65. *Iowa Utils. Bd. v. FCC*, 120 F.3d 753, 793 n.8 (8th Cir. 1997) (citation omitted), *rev'd in relevant part sub nom. AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366 (1999); see also *Iowa Utils. Bd. v. FCC*, 109 F.3d 418, 422 (8th Cir.) (observing that TELRIC might "require" ILECs "to subsidize their competitors and thereby threaten the viability of the LECs' own businesses"), *motion to vacate stay denied*, 519 U.S. 978 (1996).

66. See *Iowa Utils. Bd.*, 120 F.3d. at 800.

67. See *Iowa Utils. Bd.*, 525 U.S. 366.

68. See *id.* at 377-78, 385 (holding that the FCC could issue TELRIC under its general power to "prescribe . . . rules and regulations" concerning "interstate or foreign communication by wire or radio," 47 U.S.C. § 201 (1994)). A fractured Court upheld all FCC rules in question except 47 C.F.R. § 51.319 (1998), insofar as the Commission had failed to determine the extent to which access to proprietary network elements was "necessary" and the extent to which "the failure to provide access . . . would impair the ability" of an entrant "to provide [new] services," 47 U.S.C. § 251(d)(2) (Supp. III 1997); see 525 U.S. at 387-92. *Iowa Utilities Board* also reinstated the FCC's dialing parity rules, 47 C.F.R. §§ 51.205 to 51.215 (1998); see 525

Court, however, explicitly reserved judgment on TELRIC's merits.<sup>69</sup>

Soon after *Iowa Utilities Board*, an Arizona court rejected a claim that regulators in that state had entered a "regulatory contract" with the local ILEC.<sup>70</sup> Even more significantly, a federal court of appeals explicitly rejected an ILEC's takings clause attack on a "forward-looking methodology" resembling TELRIC.<sup>71</sup> The Supreme Court's grand cycle of cases on confiscatory ratemaking decisions,<sup>72</sup> the Fifth Circuit concluded, "does not require courts to engage in a takings analysis whenever an agency opens a previously regulated market to competition."<sup>73</sup> These distant drumbeats portend what will probably be a full judicial evaluation of the deregulatory takings theory in the *Iowa Utilities Board* remand.<sup>74</sup>

The most empirically thorough studies suggest that TELRIC will survive a takings challenge.<sup>75</sup> By their own admission, the proponents of the confiscatory ratemaking claim have not even attempted an "empirical valuation" of the gains and losses underlying the deregulatory takings theory.<sup>76</sup> We need not speculate, however, whether the ILECs will ultimately discharge their burden of proving such "stubborn

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U.S. at 386, which the Eighth Circuit had invalidated in a parallel proceeding, see *California v. FCC*, 124 F.3d 934, 940-41 (8th Cir. 1997).

69. See *Iowa Utils. Bd.*, 525 U.S. at 374 n.3.

70. See *US West Communications, Inc. v. Arizona Corp. Comm'n*, 194 P.U.R.4th 351, 295 Ariz. Adv. Rep. 41 (1999).

71. See *Texas Office of Pub. Util. Counsel v. FCC*, 183 F.3d 393, 413 n.14 (5th Cir. 1999).

72. See, e.g., *Duquesne Light Co. v. Barasch*, 488 U.S. 299 (1989); *Federal Power Comm'n v. Texaco Inc.*, 417 U.S. 380 (1974); *Permian Basin Area Rate Cases*, 390 U.S. 747 (1968); *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944); *Missouri ex rel. Southwestern Bell Tel. Co. v. Public Serv. Comm'n*, 262 U.S. 276 (1923); *Ohio Valley Water Co. v. Ben Avon Borough*, 253 U.S. 287, 289 (1920); *Smyth v. Ames*, 169 U.S. 466 (1898).

73. *Texas Office of Pub. Util. Counsel*, 183 F.3d at 437.

74. See Chen, *supra* note 51, at 1544, 1548-49. But see Leigh H. Martin, Note, *Deregulatory Takings, Stranded Investments and the Regulatory Compact in a Deregulated Electric Utility Industry*, 31 GA. L. REV. 1183, 1186 (1997) (predicting that "utility takings claims arising from deregulation" of the electricity industry may be resolved by resort to "the regulatory compact theory . . . in conjunction with traditional regulatory takings jurisprudence").

75. See generally, e.g., Gabel & Rosenbaum, *supra* note 63; Hoe & Ruscus, *supra* note 61.

76. See SIDAK & SPULBER, *supra* note 49, at 279.

facts.”<sup>77</sup> The task at hand is to expose stranded cost recovery, by whatever means achieved, as a shameless bid for the wealth of future generations.

The very “term ‘stranded costs’ is . . . a misnomer, for someone always pays for them.”<sup>78</sup> “[R]ate regulators do not,” in the parlance of takings clause jurisprudence, “allocate burdens between the ‘public’ on the one hand and the ‘few’ on the other.”<sup>79</sup> Rather, they balance “the cost of utility service between large classes of investors and consumers.”<sup>80</sup> Stranded cost recovery, whether by legislative order or by a judicial finding of confiscatory ratemaking, shifts costs from past utility investors squarely onto the shoulders of current and future customers. It is especially obnoxious if obtained through constitutional litigation. To be sure, “[g]roups which find themselves unable to achieve their objectives through the ballot frequently turn to the courts.”<sup>81</sup> But utility investors as a group deserve none of the judicial solicitude reserved for the disenfranchised and the downtrodden. Relative to all other affected parties, investors enjoy an overwhelming edge in information, wealth, and political sophistication.<sup>82</sup> Investors boast a superior ability to bear risk and to overcome unforeseen contingencies—the very economic attributes that justify the imposition of liability in virtually every other legal context.<sup>83</sup>

This is the sense in which stranded cost provisions are “the antithesis of competition.”<sup>84</sup> They represent naked wealth

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77. See *Colorado Interstate Gas Co. v. Federal Power Comm’n*, 324 U.S. 581, 605 (1945).

78. *Association of Pub. Agency Customers, Inc. v. Bonneville Power Admin.*, 126 F.3d 1158, 1180 (9th Cir. 1997); see also John Burritt McArthur, *Cost Responsibility or Regulatory Indulgence for Electricity’s Stranded Costs?*, 47 AM. U. L. REV. 775, 929 (1998) (describing the label “stranded” as “far more likely to obscure than clarify” because the term “obscure[s] the fact that [the relevant] costs are the costs of [utility] investments that have failed in the marketplace”).

79. Richard Goldsmith, *Utility Rates and “Takings”*, 10 ENERGY L.J. 241, 255 (1989); cf., e.g., *Armstrong v. United States*, 364 U.S. 40, 49 (1960) (describing the takings clause as designed “to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole”).

80. Goldsmith, *supra* note 79, at 255.

81. *NAACP v. Button*, 371 U.S. 415, 429 (1963).

82. See Rossi, *supra* note 48, at 318.

83. See Timothy J. Brennan & James Boyd, *Stranded Costs, Takings, and the Law and Economics of Implicit Contracts*, 11 J. REG. ECON. 41, 43 (1997).

84. See *Cajun Elec. Power Coop., Inc. v. Federal Energy Reg. Comm’n*, 28 F.3d 173, 179 (D.C. Cir. 1994).

transfers between generations, and backward-oriented ones at that. Any incentives fostering prudent investment disappeared long ago. As the technological, legal, and political suppositions underlying the traditional public utility model fade further into the past, the anachronistic obsession with the prudence of investments sunk and costs incurred long ago becomes the dead hand of regulated industries law. As the grip tightens, any observer sensitive to the interests of future generations surely "becom[es] more and more conscious of the . . . struggle for [an urgent] kind of Reform."<sup>85</sup>

The cure is stultifyingly simple. The law of regulated industries must return to microeconomic basics. Sunk costs, after all, are just that: sunk. "[C]ost to an economist is a forward-looking concept"; costs already incurred "do not affect decisions on price and quantity."<sup>86</sup> Sunk costs "are usually visible, but . . . should always be ignored when making . . . economic decisions."<sup>87</sup>

Happily, the law supports such economic wisdom. Nothing in the Supreme Court's confiscatory ratemaking jurisprudence forces regulators to reward an incumbent for technological obsolescence. No agency is "require[d] . . . to fix rates . . . on an investment after it has vanished, even if once prudently made."<sup>88</sup> Unless an ILEC or any other incumbent utility can provide concrete evidence of an immediate and realistic threat to its economic viability, regulation should let the path of the law run its course:

It is revolting to have no better reason for a rule of law than that so it was laid down in the time of Henry IV. It is still more revolting if the grounds upon which it was laid down have vanished long since, and the rule simply persists from blind imitation of the past.<sup>89</sup>

Mindful that "all life is an experiment," perhaps we should instead "wager our salvation upon" an unrepentantly third-best

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85. GEORGE ELIOT, *MIDDLEMARCH: A STUDY OF PROVINCIAL LIFE* 336 (Gordon S. Haight ed., 1956).

86. RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* § 1.1, at 7 (3d ed. 1986).

87. ROBERT S. PINDYCK & DANIEL L. RUBINFELD, *MICROECONOMICS* § 7.1, at 195 (3d ed. 1995).

88. *Market Street Ry. v. Railroad Comm'n*, 324 U.S. 548, 567 (1945).

89. Oliver Wendell Holmes, *The Path of the Law*, 10 *HARV. L. REV.* 457, 469 (1897), *reprinted*, 110 *HARV. L. REV.* 991, 1001 (1997).

“prophesy based upon imperfect knowledge”:<sup>90</sup> ordinary deregulation, shorn of all regard for stranded costs.

*B. The Open Hand: Dynamic Universal Service Support*

The architects of contemporary American telecommunications policy evidently prefer looking forward to looking back. The Telecommunications Act omitted explicit provisions for stranded cost recovery, and no administrative or judicial decision has countermanded the apparent legislative decision to eschew this approach. By contrast, despite its generally deregulatory orientation, the Telecommunications Act actively embraced universal service.<sup>91</sup> To put it bluntly, the Act sought “to limit state rate and entry but not universal service regulation.”<sup>92</sup>

Universal service, in short, marks the frontier of economic regulation’s great transformation. The “increased efficiency and technological innovation attributed to competition” will never render “universal service support unnecessary,” for “universal service is not an issue of efficiency but of redistribution.”<sup>93</sup> The Act perpetuated many of the law’s traditional “tax and spend’ policies . . . behind a veil of public utility regulation” merely with a different set of institutional actors.<sup>94</sup>

Universal service has nevertheless endured a great transformation of its own. Despite surviving an extended deregulatory cycle, universal service is now decoupled from traditional restrictions on entry and exit. Starting in the 1970s, “local

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90. *Abrams v. United States*, 250 U.S. 616, 630 (1919) (Holmes, J., dissenting).

91. See generally, e.g., Deonne L. Bruning, *The Telecommunications Act of 1996: The Challenge of Competition*, 30 CREIGHTON L. REV. 1255, 1269–78 (1997); Arturo Gándara, *Equity in an Era of Markets: The Case of Universal Service*, 33 WAKE FOREST L. REV. 107 (1998); Gregory L. Rosston, *Universal Service and Competition*, 50 HASTINGS L.J. 1585 (1999); Mark P. Trinchero & Holly Rachel Smith, *Federal Preemption of State Universal Service Regulations Under the Telecommunications Act of 1996*, 51 FED. COMM. L.J. 303 (1999).

92. *Cellular Telecomm. Indus. Ass’n v. FCC*, 168 F.3d 1332, 1337 (D.C. Cir. 1999); see also *Bell Atl. Tel. Cos. v. FCC*, 131 F.3d 1044, 1047–49 (D.C. Cir. 1997).

93. Eli M. Noam, *Will Universal Service and Common Carriage Survive the Telecommunications Act of 1996?*, 97 COLUM. L. REV. 955, 963 (1997).

94. James A. Montanye, *Rent Seeking Never Stops: An Essay on Telecommunications Policy*, 1 INDEP. REV. 249, 272 (1996). See generally David L. Kaserman & John W. Mayo, *Cross-Subsidies in Telecommunications: Roadblocks on the Road to More Intelligent Telephone Pricing*, 11 YALE J. ON REG. 119, 126–30 (1994).

franchised utilities" in several industries lost their "guaranteed monopolies," but "continued to provide bundled [service] to the vast majority of customers who had neither the capacity to buy on the interstate [or wholesale] market nor the resilience to forgo . . . state regulation."<sup>95</sup>

Before 1996, universal service provisions focused almost exclusively on plain old telephone service ("POTS") for high-cost and low-income customers.<sup>96</sup> Nearly all branches of regulated industries law required utilities to extend lifeline rates and to serve as carrier of last resort.<sup>97</sup> Section 254 of the Telecommunications Act preserved much of this tradition. The Act enshrined the principle of access for "low-income consumers and those in rural, insular, and high cost areas."<sup>98</sup> It specified that long-distance rates for rural customers shall not exceed "the rates charged . . . subscribers in urban areas."<sup>99</sup> It also guaranteed support for carriers serving rural health care providers.<sup>100</sup> The Act preserved the FCC's Lifeline Assistance Program.<sup>101</sup> The FCC and its state-level counterparts must "ensure that universal service is available at rates that are just, reasonable, and affordable."<sup>102</sup> Even the establishment of a Federal-State Joint Board constituted a nod to the redistributive tradition,<sup>103</sup> for local regulators are far more aggressive than the FCC in shifting wealth to the customary beneficiaries of universal service.<sup>104</sup> This clear assignment of state and fed-

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95. *General Motors Corp. v. Tracy*, 519 U.S. 278, 294 (1997).

96. See Angela J. Campbell, *Universal Service Provisions: The "Ugly Duckling" of the 1996 Act*, 29 CONN. L. REV. 187, 189-90 (1996).

97. See, e.g., 16 U.S.C. § 2624 (1994) (acknowledging lifeline rates as an exception from cost-of-service rate-making principles); *Federal Energy Reg. Comm'n v. Mississippi*, 456 U.S. 742, 748 (1982); *Great Lakes Steel Div. v. Michigan Pub. Serv. Comm'n*, 344 N.W.2d 321 (Mich. Ct. App. 1983); *In re Investigation into Rate Structures of Elec. Utils.*, 38 P.U.R.4th 409 (Or. Pub. Util. Comm'n 1980).

98. 47 U.S.C. § 254(b)(3) (Supp. III 1997).

99. *Id.* § 254(g).

100. See *id.* § 254(h)(1).

101. See *id.* § 254(j); see also 47 C.F.R. § 69.117 (1999) (establishing the Lifeline Assistance Program).

102. 47 U.S.C. § 254(i) (Supp. III 1997) (emphasis added); see also *id.* § 254(b)(1) ("Quality services should be available at just, reasonable, and affordable rates.").

103. See *id.* § 254(a).

104. See Glen O. Robinson, *The "New" Communications Act: A Second Opinion*, 29 CONN. L. REV. 289, 308 (1996) (describing state regulators as "relentless in challenging FCC efforts to introduce competition" because of "a well-grounded fear" that federal success in deregulation "would mean higher local residential service

eral responsibilities sharply distinguishes section 254 from the local competition provisions of sections 251 and 252, which yielded TELRIC and the jurisdictional power struggle called *Iowa Utilities Board*.

But section 254 had its revolutionary side, too. The Act acknowledged not only POTS but also PANS, "pretty amazing new services," for an information-driven economy.<sup>105</sup> Section 254 expanded the definition of universal service in order to foster innovation and technological progress. Congress defined universal service as "an evolving level of telecommunications services that the Commission shall establish periodically . . . , taking into account advances in telecommunications and information technologies and services."<sup>106</sup> Section 254 directed the FCC and the Joint Board to secure "[a]ccess to advanced telecommunications and information services . . . in all regions of the Nation,"<sup>107</sup> especially for schools, libraries, and health care providers.<sup>108</sup> The resulting "e-rate" program that emerged from these provisions would become "the Commission's most visible regulatory action . . . pursuant to" the Act's "universal-service mandates."<sup>109</sup> By naming schools and libraries as the newest and most politically prominent beneficiaries of universal service, the Act made a conscious contribution to the legal transition from an agrarian economy to one based on information.<sup>110</sup>

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rates"); cf. *AT&T v. US West*, 31 F. Supp. 2d 861, 864 (D. Or. 1998) ("Congress contemplated that the state public utility commissions would continue to play a vital role in the preservation and advancement of universal service . . ."). See generally Philip J. Weiser, Chevron, *Cooperative Federalism, and Telecommunications Reform*, 52 VAND. L. REV. 1 (1999) (advocating a prominent interpretive role for state regulators within federal telecommunications law).

105. See generally HENK BRANDS & EVAN T. LEO, *THE LAW AND REGULATION OF TELECOMMUNICATIONS CARRIERS* 703 (1999) (defining POTS and PANS).

106. 47 U.S.C. § 254(c)(1) (Supp. III 1997).

107. *Id.* § 254(b)(2).

108. See *id.* § 254(b)(6) (designating access for these beneficiaries as a "universal service principle"); § 254(h)(2) (directing the FCC to "establish competitively neutral rules" for "enhanc[ing]" these beneficiaries' "access to advanced telecommunications and information services").

109. Jerry Hausman & Howard Shelanski, *Economic Welfare and Telecommunications Regulation: The E-Rate Policy for Universal-Service Subsidies*, 16 YALE J. ON REG. 19, 21 (1999).

110. See Campbell, *supra* note 96, at 203; cf. Frank Easterbrook, *Cyberspace and the Law of the Horse*, 1996 U. CHI. LEGAL F. 207, 208 (acknowledging the difficulty of formulating legal rules for a rapidly evolving electronic economy).

To complete the remarkable makeover, the Act decreed that the entire package—traditional protections for high-cost and low-income consumers as well as the new initiatives regarding “advanced” services—be accomplished with transparency and minimal competitive distortion. Universal service mechanisms “should be specific, predictable and sufficient.”<sup>111</sup> Any support extended under section 254 must be “explicit.”<sup>112</sup> The Act’s sponsors plainly intended “that any support mechanisms continued or created under . . . section 254 should be explicit, rather than implicit as many support mechanisms” had been.<sup>113</sup> Sympathetic observers hailed this aspect of the Act as “a great improvement because it move[d] the scheme for universal service out from between the lines of the incumbents’ rate structures and place[d] it in the light of day.”<sup>114</sup>

This transformation of universal service, at least in theory, represented no retreat from the Act’s overall commitment to deregulation and minimal competitive distortion. No “telecommunications carrier may . . . use services that are not competitive to subsidize services that are subject to competition.”<sup>115</sup> Nor should “services included in the definition of universal service bear [any] more than a reasonable share of the joint and common costs of [the] facilities used.”<sup>116</sup> All duties and aspirations established under section 254 speak in terms of “equitable and nondiscriminatory” contributions from “[e]very telecommunications carrier”<sup>117</sup> and “[a]ll providers of telecommunications services.”<sup>118</sup> Programs to deliver advanced services to schools, libraries, and rural health care providers—arguably section 254’s most significant innovation—must follow “competitively neutral rules.”<sup>119</sup>

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111. 47 U.S.C. § 254(b)(5) (Supp. III 1997).

112. *See id.* § 254(e).

113. H.R. CONF. REP. NO. 104-458, 104th Cong., 2d Sess. 131 (1996), *reprinted in* 1996 U.S.C.C.A.N. 124, 142.

114. John W. Berresford, *The Future of the FCC: Promote Competition, Then Relax*, 50 ADMIN. L. REV. 731, 761 (1998).

115. 47 U.S.C. § 254(k) (Supp. III 1997).

116. *Id.*

117. *See id.* § 254(d) (referring to contributions by interstate carriers); *id.* § 254(f) (referring to contributions by intrastate carriers).

118. *Id.* § 254(b)(4).

119. *See id.* § 254(h)(3).

Together with TELRIC and an order on access charges,<sup>120</sup> the FCC's initial universal service order<sup>121</sup> headlined the "competition trilogy" of proposed rules for reforming local telephone service.<sup>122</sup> The Fifth Circuit's review of the Commission's universal service order divided POTS from PANS. The court toed the statutory fault line separating the more traditional objective of providing "support . . . for high-cost areas" from section 254(h)'s technology-forcing "programs supporting schools, libraries, and health care providers."<sup>123</sup>

The legality of the high-cost initiatives turned almost entirely on questions of competition policy. The universal service order's PANS provisions hinged on the Commission's success in reconciling these initiatives with section 254's stated commitment to minimizing the distortion of competition among carriers. For instance, the Fifth Circuit allowed the FCC to adopt forward-looking cost models<sup>124</sup> and to exempt carriers receiving universal service support from the obligation to offer unbundled services to their competitors.<sup>125</sup> At the same time, the court invalidated the Commission's decision to "requir[e] most ILECs to recover their universal contributions through access charges" on interstate calls, holding that such a rule imposes "precisely the sort[ ] of implicit subsidies" banned by section 254(e).<sup>126</sup>

The Fifth Circuit also allowed the FCC to expand the class of contributors to the Universal Service Fund in light of new

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120. See *In re Access Charge Reform*, 7 COMM. REG. (P&F) 1209 (Fed. Communications Comm'n May 16, 1997), *aff'd sub nom.* *Southwestern Bell Tel. Co. v. FCC*, 153 F.3d 523 (8th Cir. 1998); *In re Access Charge Reform Price Cap Performance Review for Local Exchange Carriers*, 11 F.C.C.R. 21,354 (1996); *In re Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 11 F.C.C.R. 15,499 (1996), *aff'd in part, rev'd in part sub nom.* *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366 (1999).

121. See *In re Federal-State Joint Bd. on Universal Serv.*, 12 F.C.C.R. 8776 (1997), *aff'd in part, rev'd in part sub nom.* *Texas Office of Public Util. Counsel v. FCC*, 183 F.3d 393 (5th Cir. 1999).

122. See generally Gregory L. Rosston, *The 1996 Telecommunications Act Trilogy*, MEDIA L. & POL'Y, Winter 1996, at 1.

123. *Texas Office of Public Util. Counsel*, 183 F.3d at 408-09.

124. See *id.* at 410-13.

125. See *id.* at 419-21.

126. *Id.* at 425; cf. *AT&T Communications of the Pac. NW., Inc. v. US West Communications, Inc.*, 31 F. Supp. 2d 861, 864 (D. Or. 1998) (invalidating a comparable order by a state public utility commission, reasoning that an increased "access charge is really an implicit universal service subsidy" and therefore "unlawful under the Act").

telecommunications technology. Commercial mobile radio service ("CMRS") providers complained about their inclusion in the universal service scheme. Recognizing that paging carriers are "uniquely dependent on a widespread telecommunications network" that "increases the number of potential locations for paging use," the court dismissed the CMRS providers' objections.<sup>127</sup> The Fifth Circuit also upheld the FCC's parallel decision to allow states to collect universal service contributions from CMRS providers.<sup>128</sup>

The most remarkable aspects of the universal service order, however, involved the "new" and "broad statutory mandate" under section 254(h) "to provide support to elementary and secondary schools, libraries, and health care providers"—in short, a new class of beneficiaries far removed from the low-income and high-cost consumers traditionally helped by universal service.<sup>129</sup> "The FCC concede[d] that internet access and internal connections cannot be defined as 'telecommunications services' for purposes" of section 254(h).<sup>130</sup> Nevertheless, the Fifth Circuit not only "affirm[ed] those aspects of the Order providing internet services and internal connections to schools and libraries," but also upheld the FCC's decision "to provide support payments to non-telecommunications entities" supplying such services and connections.<sup>131</sup> No interpretive leap of faith seemed too great in the quest "to ensure that Congress's instructions on expanding universal service in the form of internet access and internal connections will not be frustrated by local monopolies."<sup>132</sup>

The "e-rate" component of the universal service order represented a decisive victory for internet service providers ("ISPs") over ILECs. In the past two years, ISPs have won two other disputes pitting them against ILECs and other elements of the telecommunications and information services establishment. In 1998, the Eighth Circuit upheld the FCC's decision to

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127. *Texas Office of Pub. Util. Counsel*, 183 F.3d at 428.

128. *See id.* at 430–33; *see also* Cellular Telecommunications Indus. Ass'n v. FCC, 168 F.3d 1332 (D.C. Cir. 1999); *Sprint Spectrum v. State Corp. Comm'n*, 149 F.3d 1058 (10th Cir. 1998).

129. *Texas Office of Pub. Util. Counsel*, 183 F.3d at 440.

130. *Id.*

131. *Id.* at 443.

132. *Id.* at 444.

exempt ISPs from interstate access charges.<sup>133</sup> The following year, the Seventh Circuit upheld an FCC order allowing state public utility commissions to require ILECs to pay reciprocal compensation to their competitors for carriage of ISP-bound phone calls.<sup>134</sup> The triumph of the ISPs is all the more stunning when one realizes that the Telecommunications Act practically ignored the internet except as a transmission medium for pornography.<sup>135</sup>

None of this, of course, amounts to a comprehensive federal policy for the internet.<sup>136</sup> The Telecommunications Act does declare that “[i]t is the policy of the United States to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer service.”<sup>137</sup> Mindful of this admonition, the FCC has pledged “to foster and preserve the dynamic free market for the Internet-related services.”<sup>138</sup> Toward this end, the universal service or-

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133. See *Southwestern Bell Tel. Co. v. FCC*, 153 F.3d 523, 541–44 (8th Cir. 1998); cf. J. Gregory Sidak & Daniel F. Spulber, *Cyberjam: The Law and Economics of Internet Congestion of the Telephone Network*, 21 HARV. J.L. & PUB. POL’Y 327, 370–82 (1998) (condemning this decision as an unconstitutional taking of a burdened ILEC’s property).

134. See *Illinois Bell Tel. Co. v. WorldCom Technologies, Inc.*, 179 F.3d 566, 572–73 (7th Cir. 1999). Reciprocal compensation for the transport and termination of telecommunications traffic is a duty owed by all LECs, regardless of incumbency status, to their competitors. See 47 U.S.C. § 251(b) (Supp. III 1997). Transport and termination “is the process whereby a call that is initiated by a customer of one telecommunications carrier is routed to a customer of a different telecommunications carrier and completed by that carrier.” *Iowa Utils. Bd. v. FCC*, 120 F.3d 753, 792 n.7 (8th Cir. 1997), *aff’d in part, rev’d in part sub nom. AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366 (1999). Typically, the carrier “that ‘terminates’ or completes the call to its customer . . . charges for the cost of terminating the call.” *Id.*; accord *Indiana Bell Tel. Co. v. Smithville Tel. Co.*, 31 F. Supp. 2d 628, 632 n.3 (S.D. Ind. 1998). See generally *TCG Milwaukee, Inc. v. Public Serv. Comm’n*, 980 F. Supp. 992, 995–97 (W.D. Wis. 1997) (describing the difference between “bill-and-keep” and cost-based methods of reciprocal compensation for transport and termination of local calls).

135. See generally Chen, *supra* note 52; John D. Podesta, *Unplanned Obsolescence: The Telecommunications Act of 1996 Meets the Internet*, 45 DEPAUL L. REV. 1093 (1996).

136. See generally Yochai Benkler, *Net Regulation: Taking Stock and Looking Forward*, 71 U. COLO. L. REV. 1203 (2000).

137. 47 U.S.C. § 230(b)(2) (Supp. III 1997).

138. *In re Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, 14 F.C.C.R. 3689, 3693 (1999); cf. Leonard J. Kennedy & Lori A. Zallaps, *If It Ain’t Broke . . . The FCC and Internet Regulation*, 7 COMMLAW CONSPPECTUS 17, 18, & n.6 (1999) (arguing that § 230 and the “statutory definitions” of “information services” and “telecommunications,” see 47 U.S.C. § 153(20), (43) (Supp. III 1997), “require[] that information and Internet services be legally distinct from, and remain free of, government regulation”).

der has delivered a modest amount of succor for ISPs, a rapidly growing infant industry within the larger telecommunications and information sector. The circuit court decisions on interstate access charges and reciprocal compensation achieve roughly the same result.<sup>139</sup> For all its complexity, the use of section 254 to deliver advanced services and to favor ISPs reflects the policy that motivates below-cost pricing of second-class postage in order to subsidize the delivery of newspapers, magazines, and other periodicals with substantial "educational, cultural, scientific, and informational value."<sup>140</sup> The gamble will pay off all the more if the internet becomes a viable channel for voice messages as well as data.<sup>141</sup>

The FCC did commit a crucial tactical mistake in implementing section 254's advanced services provisions. Numerous commentators have lamented Congress's failure to authorize direct subsidies for universal service, drawn from general tax revenues rather than surcharges on telecommunications services.<sup>142</sup> The fact remains that the Telecommunications Act requires some form of internal subsidy. The FCC, however, chose to finance the e-rate program by increasing the access charges on long-distance calls rather than increasing the per-line subscriber line charge assessed for local carriage.<sup>143</sup> In stressing the affordability of residential and single-line business local ex-

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139. See Steve Bickerstaff, *Shackles on the Giant: How the Federal Government Created Microsoft, Personal Computers, and the Internet*, 78 TEX. L. REV. 1, 82-85 (1999) (describing these and other similar policies as *de facto* subsidies that "encourage the use of the Internet for commerce and communication").

140. 39 U.S.C. § 3622(b)(8) (1994); see also National Ass'n of Greeting Card Publishers v. United States Postal Serv., 462 U.S. 810, 813 n.2 (1983); *Mail Order Ass'n of Am. v. United States*, 2 F.3d 408, 415 (D.C. Cir. 1993); cf. *Columbia Broadcasting Sys., Inc. v. Democratic Nat'l Comm.*, 412 U.S. 94, 159 n.10 (1973) (Douglas, J., concurring in judgment) (arguing that "the existence of newspapers," especially the most vulnerable "10,000 magazines and small newspapers . . . is dependent upon the preferential mailing privileges newspapers receive through second-class postage rates").

141. See generally Seth A. Cohen, Note, *Deregulating, Defragmenting & Interconnecting: Reconsidering Commercial Telecommunications Regulation in Relation to Internet Telephony*, 18 J.L. & COM. 133 (1998) (assessing the viability of the internet as a substitute for conventional telephone networks).

142. See, e.g., Berresford, *supra* note 114, at 763; Hausman & Shelanski, *supra* note 109, at 30; Thomas G. Krattenmaker, *The Telecommunications Act of 1996*, 29 CONN. L. REV. 123, 164-66 (1996).

143. See *In re Federal-State Joint Bd. on Universal Serv.*, 12 F.C.C.R. 8776, 9166-67 (1997), *aff'd in part, rev'd in part sub nom.* *Texas Office of Public Util. Counsel v. FCC*, 183 F.3d 393 (5th Cir. 1999).

change service (which is already almost universally deployed) over long-distance service (which is relatively price-sensitive), the FCC taxed the wrong service.<sup>144</sup>

The flaws of the universal service order aside, the FCC's true regulatory triumph lay in its flexible treatment of section 254's definition of universal service as an "evolving" concept. The closest analogue within telecommunications law is the Commission's power under the 1996 Act to "forbear" from enforcing obsolete portions of its statutory mandate.<sup>145</sup> The universal service initiative is arguably much more aggressive in that the Commission did not merely refrain from exercising clear statutory authority, but rather took an affirmative step beyond the four corners of section 254.

### III. THE INVISIBLE HAND: DEREGULATION AND ITS DIVIDENDS

The contrast between stranded cost recovery and expanded universal service is undeniably stark. The former policy rests on the paradoxical and perhaps fatally contradictory assumption that incentives for future investment depend on compensation for past investors. The latter policy pits ISPs against all other competitors in an effort to stimulate an emerging communications medium. In this sense, the technologically responsive implementation of section 254 follows the conventional—and controversial—industrial policy of picking winners and backing them with subsidies of some sort.<sup>146</sup>

In resolving this conflict, we should consider a less ambitious but arguably more promising third possibility. Deregulation per se may be a spur to innovation. In order to understand how encouraging entry might foster technological development, it behooves us to look first at the innovation markets debate. A

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144. See Hausman & Shelanski, *supra* note 109, at 21, 36.

145. See 47 U.S.C. § 160 (Supp. III 1997); Jim Chen, *The Legal Process and Political Economy of Telecommunications Reform*, 97 COLUM. L. REV. 835, 864 (1997); cf. MCI Telecomm. Co. v. AT&T, 512 U.S. 218, 224–27 (1994) (invalidating the FCC's use of its power to "modify" statutory requirements insofar as such exercises of discretion effected "basic and fundamental" changes in regulatory policy). See generally Scott M. Schoenwald, *Regulating Competition in the Interexchange Telecommunications Market: The Dominant/Nondominant Carrier Approach and the Evolution of Forbearance*, 49 FED. COMM. L.J. 367 (1997).

146. See generally, e.g., Eugene Bardach, *Implementing Industrial Policy*, in THE INDUSTRIAL POLICY DEBATE 91 (Chalmers Johnson ed., 1984); OTIS L. GRAHAM, JR., LOSING TIME: THE INDUSTRIAL POLICY DEBATE (1992).

prominent factor in the United States' antitrust suit against Microsoft,<sup>147</sup> the innovation markets debate may suggest ways to improve telecommunications law's implicit technology policy. After all, the economics of invention is but one manifestation of intergenerational wealth transfer.

After examining the basic terms of the innovation markets debate, I will explain the relevance of this debate for telecommunications and other regulated industries. The most obvious application of the theory is the deregulation and decentralization of electricity generation in the United States. The successes and pitfalls of that story have much to teach the makers of telecommunications policy.

#### A. *Industrial Market Structure and Artistic Performance*

The contemporary literature on innovation markets has two objectives. It seeks not only to describe the relationship between market structure and creativity, but also to prescribe the legal strategies that maximize innovation. Although the term "innovation markets" originated in post-Chicago antitrust scholarship,<sup>148</sup> the debate swirls in any market driven by novelty, talent, or variety. For nearly four decades, that debate has pitted Joseph Schumpeter against Kenneth Arrow.

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147. See generally *United States v. Microsoft Corp.*, 147 F.3d 935 (D.C. Cir. 1998) (describing the procedural history of the Microsoft litigation); Daniel J. Gifford & David McGowan, *A Microsoft Dialog*, 44 ANTITRUST BULL. 619 (1999). For accounts of this controversy in its earlier phases, see Jay Dratler, Jr., *Microsoft as an Antitrust Target: IBM in Software?*, 25 SW. U. L. REV. 671 (1996); Daniel J. Gifford, *Java and Microsoft: How Does the Antitrust Story Unfold?*, 44 VILL. L. REV. 67 (1999); Daniel J. Gifford, *Microsoft Corporation, the Justice Department, and Antitrust Theory*, 25 SW. U. L. REV. 621 (1996).

148. See generally, e.g., Kenneth C. Baseman et al., *Microsoft Plays Hardball: The Use of Exclusionary Pricing and Technical Incompatibility to Maintain Monopoly Power in Markets for Operating System Software*, 40 ANTITRUST BULL. 265 (1995); Richard J. Gilbert & Steven C. Sunshine, *Incorporating Dynamic Efficiency Concerns in Merger Analysis: The Use of Innovation Markets*, 63 ANTITRUST L.J. 569 (1995); Richard J. Gilbert & Steven C. Sunshine, *The Use of Innovation Markets: A Reply to Hay, Rapp, and Hoerner*, 64 ANTITRUST L.J. 75 (1995); Herbert Hovenkamp, *Antitrust Policy After Chicago*, 84 MICH. L. REV. 213 (1985); Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price*, 96 YALE L.J. 209 (1986); Michael H. Riordan & Steven C. Salop, *Evaluating Vertical Mergers: A Post-Chicago Approach*, 63 ANTITRUST L.J. 513 (1995); Lawrence A. Sullivan, *Post-Chicago Economics: Economists, Lawyers, Judges, and Enforcement Officials in a Less Determinate Theoretical World*, 63 ANTITRUST L.J. 669 (1995).

"Creative destruction" was once gospel in the church of economics, and Joseph Schumpeter was its prophet. Schumpeter posited that radical technological and organizational change drove the capitalist economies of the West, in stark contrast with the planned economies of the socialist bloc.<sup>149</sup> He argued that a firm with market power would enjoy greater *demand* for innovation by virtue of its ability to profit from its inventions.<sup>150</sup> Moreover, he argued, "advantages which . . . are as a matter of fact secured only on the monopoly level" would enable a dominant firm to generate a greater *supply* of innovations relative to its competitive counterparts.<sup>151</sup> At the heart of the "Schumpeterian hypothesis" lay the assumption that accumulated monopoly profits facilitate costly, risky research and development.<sup>152</sup>

The Schumpeterian hypothesis that dominant firms innovate more than their competitively structured counterparts can be summarized in a single phrase. Big, for want of a better word, is beautiful.<sup>153</sup> "What we have got to accept," Schumpeter wrote, is that the monopolistic firm "has come to be the most powerful engine of [economic] progress."<sup>154</sup> "In this respect," he concluded, "perfect competition is not only impossible but inferior, and has no title to being set up as a model of ideal efficiency."<sup>155</sup>

Kenneth Arrow articulated what is now recognized as the leading theoretical alternative to the Schumpeterian hypothesis. Without mentioning Schumpeter or creative destruction, Arrow attacked the Schumpeterian hypothesis by arguing that "the incentive to invent is less under monopolistic than under

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149. See JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY 81-86 (1942); see also Robert P. Merges, *Commercial Success and Patent Standards: Economic Perspectives on Innovation*, 76 CAL. L. REV. 805, 848 (1988) (describing the pursuit of "temporary monopoly profits" made possible by "technological innovation" as the primary spur for "the tremendous growth of the Western economies").

150. See SCHUMPETER, *supra* note 149, at 101.

151. *Id.*

152. See Morton I. Kamien & Nancy L. Schwartz, *Self-Financing of an R and D Project*, 68 AM. ECON. REV. 252 (1978).

153. *View WALL STREET* (Trimark Pictures 1987) ("Greed, for want of a better word, is good."). *Contra* E.F. SCHUMACHER, SMALL IS BEAUTIFUL: ECONOMICS AS IF PEOPLE MATTERED (1973); cf. WENDELL BERRY, WHAT ARE PEOPLE FOR? (1990).

154. SCHUMPETER, *supra* note 149, at 106.

155. *Id.*

competitive conditions.”<sup>156</sup> He reasoned that a “monopolist’s incentive is always less than the cost reduction” on its output after an invention, which in turn is “less than the competitive output” both “before and after [the] invention.”<sup>157</sup> “Since the inventor’s incentive under competition is the cost reduction on the competitive output,” Arrow argued, “it will always exceed the monopolist’s incentive.”<sup>158</sup>

Let us restate Arrow’s counter-Schumpeterian hypothesis in more formal jargon: Unless it has the power to engage in perfect price discrimination, a monopolist realizes less marginal revenue for every additional unit of output. The monopolist will accordingly truncate production rather than sell additional, profit-eroding units. The resulting price is higher than the price that would prevail in a competitive market, and total output falls below the socially optimal level. Because a monopolist realizes less marginal revenue on every additional unit, it will stop output short of the socially optimal amount.

Arrow also suggested that “a free-enterprise economy” is likely “to underinvest in invention and research . . . because it is risky, because the product can be appropriated only to a limited extent, and because of increasing returns in use.”<sup>159</sup> He observed that patent laws reduce the incentive to improve existing inventions by entitling the patentee to appropriate the value of any improvement made by an outsider.<sup>160</sup> “[P]recisely to the extent that” a system of property rights succeeds in providing incentives to invent, he concluded, “there is an underutilization of the information” that is created.<sup>161</sup> Many legal scholars have drawn on Arrow’s insights in prescribing the optimal scope of intellectual property.<sup>162</sup>

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156. Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources to Invention*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY* 609 (National Bureau of Economic Research ed., 1962), reprinted in *COLLECTED PAPERS OF KENNETH J. ARROW: PRODUCTION AND CAPITAL* 104, 115 (Belknap 1985). All subsequent references will be based on the 1985 reprint.

157. *Id.* at 116.

158. *Id.*

159. *Id.* at 114.

160. *See id.* at 113.

161. *Id.* at 112.

162. *See, e.g.,* Wendy J. Gordon, *Of Harms and Benefits: Torts, Restitution, and Intellectual Property*, 21 *J. LEGAL STUD.* 449, 475–76 (1992); Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 *TEX. L. REV.* 989, 1050–51 (1997); Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 *COLUM. L. REV.* 839, 875 (1990).

As if to prove that economics is more of a persuasive art than a quantitative science,<sup>163</sup> the struggle between Schumpeter and Arrow has yielded more rhetoric than results. Empirical proof of the Schumpeterian hypothesis has proved elusive.<sup>164</sup> Even sympathetic scholars no longer accept "Schumpeter's . . . clearly implied conclusions . . . that more innovations will be forthcoming if small firms are combined into big ones."<sup>165</sup> "[T]echnological vigor appears to increase with concentration mainly at relatively low levels," but "additional market power" beyond four-firm concentration ratios of "50 or 55 percent . . . may be downright stultifying."<sup>166</sup>

The populist strain in American antitrust law has long echoed Arrow's vision. Some judges have even ascribed affirmative moral significance to competition's impact on innovation. Whereas "possession of unchallenged economic power deadens initiative, discourages thrift and depresses energy," wrote Judge Learned Hand, "rivalry is a stimulant, to industrial progress; [and] the spur of constant stress is necessary to counteract an inevitable disposition to let well enough alone."<sup>167</sup> By contrast, monopoly "encourages sloth rather than the active quest for excellence."<sup>168</sup> These conclusions, however, contain more rhetorical pizzazz than empirical support. Arrow's followers may have succumbed to the common post-Chicago malady of focusing "too . . . narrowly . . . on the proposition that technologies can become 'locked-in' to suboptimal choices like the QWERTY keyboard."<sup>169</sup> Indeed, the founding myth of the QWERTY keyboard<sup>170</sup> has influenced policy<sup>171</sup> despite over-

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163. See generally D.N. McCLOSKEY, *THE RHETORIC OF ECONOMICS* 54-86 (1985).

164. See generally Jesse W. Markham, *Market Structure, Business Conduct, and Innovation*, 55 AM. ECON. REV. 323 (1965).

165. Franklin M. Fisher & Peter Temin, *Returns to Scale in Research and Development: What Does the Schumpeterian Hypothesis Imply?*, 81 J. POL. ECON. 56, 57 (1973), reprinted in FRANKLIN M. FISHER, *INDUSTRIAL ORGANIZATION, ECONOMICS, AND THE LAW* 172, 173 (John Monz ed., 1991).

166. F.M. SCHERER, *INNOVATION AND GROWTH: SCHUMPETERIAN PERSPECTIVES* 247 (1984).

167. *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 427 (2d Cir. 1945) (Hand, J.); accord *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 272-73 (2d Cir. 1979), cert. denied, 444 U.S. 1093 (1980).

168. *Berkey*, 603 F.2d at 273.

169. Gavin Wright, *Towards a More Historical Approach to Technological Change*, 107 ECON. J. 1560, 1564 (1997).

170. See Paul A. David, *Clio and the Economics of QWERTY*, 75 AM. ECON. REV. 332 (1985).

whelming evidence that the competing Dvorak keyboard offers no substantial gains in efficiency.<sup>172</sup>

The battle between Schumpeter and Arrow, in short, appears to have been fought to an inconclusive draw. “[N]either theory nor evidence suggests that substantial market power is so generally conducive to technological progress that toleration or encouragement would be desirable.”<sup>173</sup> Much of the trouble stems from the elusive nature of innovation. That slippery process “is intangible, uncertain, unmeasurable, and often even unobservable, except in retrospect.”<sup>174</sup> Like so many other economic prescriptions, each competing theory of innovation markets is “indeterminate with a vengeance.”<sup>175</sup>

Deregulation has confounded rather than clarified the innovation markets debate. Although telephone deregulation in the United States is one of history’s greatest experiments in managing and then dismantling a monopoly,<sup>176</sup> the story of innovation in telecommunications does little to pierce this fog of anecdotal and contradictory evidence.

On one side of the rhetorical divide stands the story of Bell Laboratories as ingenious industrial giant, the bold corporate inventor of coaxial cable, microwave transmission, and the

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171. See, e.g., PAUL KRUGMAN, *PEDDLING PROSPERITY: ECONOMIC SENSE AND NONSENSE IN THE AGE OF DIMINISHED EXPECTATIONS* 246 (1994) (referring to path dependence as the “economics of QWERTY”).

172. See Stan Liebowitz & Stephen E. Margolis, *Policy and Path Dependence: From QWERTY to Windows 95*, 3 *REGULATION* 33 (1995); S.J. Liebowitz & Stephen E. Margolis, *The Fable of the Keys*, 33 *J.L. & ECON.* 1 (1990). But see Jared Diamond, *The Curse of QWERTY*, *DISCOVER*, Apr. 1997, at 34 (attempting to rehabilitate the QWERTY story).

173. II PHILLIP E. AREEDA & DONALD F. TURNER, *ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION* 291 (1978); see also Richard T. Rapp, *The Misapplication of the Innovation Market Approach to Merger Analysis*, 64 *ANTITRUST L.J.* 19, 29 (1995) (declining to draw normative conclusions from the relationship between market structure, innovation, and social welfare); F.M. Scherer, *Schumpeter and Plausible Capitalism*, 30 *J. ECON. LIT.* 1416 (1992) (same).

174. Rapp, *supra* note 173, at 27.

175. See F.M. SCHERER & DAVID ROSS, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 519 (3d ed. 1990) (making this assessment of the “countervailing power” strategy that underlies, among other things, federal labor law).

176. See generally Chen, *supra* note 145, at 837–66 (recounting the history of American telecommunications law through four “ages” of regulatory failure and reform).

transistor.<sup>177</sup> The Bell System sustained its innovative outburst throughout the 1940s and 1950s, even though two of its leading inventions would eventually enable competitors to loosen AT&T's grip on local and long-distance telephony. If indeed "it was technological change that really undermined AT&T's monopoly and the regulatory system that went with it,"<sup>178</sup> then the Bell System deserves credit for landing the first blows. Microwave transmission became the first viable alternative to long-distance carriage over AT&T's copper-wire network.<sup>179</sup> Coaxial cable, first deployed in the 1940s "to enhance" the reach of "broadcast television [in] remote or mountainous communities,"<sup>180</sup> would eventually spawn a distinct industry simultaneously reviled as a threat to conventional broadcasting<sup>181</sup> and heralded as a source of competition in local telephony.<sup>182</sup> A generation after unleashing these corrosive technologies, the Bell System even sponsored an academic journal that laid much of the intellectual foundation for the deregulatory spasms of the late 1970s and early 1980s.<sup>183</sup>

The same corporate empire, however, reflexively opposed competition in the manufacturing of customer premises equipment. The Bell System systematically and perhaps irrationally fought competitors' efforts to supply such ominous equipment

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177. See KELLOGG ET AL., *supra* note 14, §§ 1.4.1 to 1.4.2, at 24–28; JOHN R. MCNAMARA, *THE ECONOMICS OF INNOVATION IN THE TELECOMMUNICATIONS INDUSTRY* 18–21 (1991).

178. DANIEL YERGIN & JOSEPH STANISLAW, *THE COMMANDING HEIGHTS: THE BATTLE BETWEEN GOVERNMENT AND THE MARKETPLACE THAT IS REMAKING THE MODERN WORLD* 347 (1998).

179. See *In re* Specialized Common Carrier Servs., 29 F.C.C.2d 870 (1971), *aff'd sub nom.* Washington Utils. & Transp. Comm'n v. FCC, 513 F.2d 1142 (9th Cir. 1975); *In re* Applications of Microwave Communications, Inc., 18 F.C.C.2d 953 (1969); *In re* Allocation of Frequencies in the Bands Above 890 Mc, 27 F.C.C. 359, 413 (1959).

180. *Turner Broadcasting Sys., Inc. v. FCC*, 512 U.S. 622, 627 (1994); see also *United States v. Southwestern Cable Co.*, 392 U.S. 157, 162–63 (1968) (describing the emergence and rapid growth of prototypical cable systems).

181. See *Turner Broadcasting Sys., Inc. v. FCC*, 520 U.S. 180 (1997) (upholding the "must-carry" provisions of the Cable Television Consumer Protection and Competition Act of 1992).

182. See H.R. CONF. REP. NO. 104-458, 104th Cong., 2d Sess. 148 (1996) (arguing that cable television's 95% market penetration suggests the possibility of "meaningful facilities based competition" in many local telephone markets), reprinted in 1996 U.S.C.C.A.N. 124, 160.

183. See F. Mark Garlinghouse, *About This Journal*, 1 BELL J. ECON. & MGMT. SCI. 3 (1970).

as handsets and answering machines.<sup>184</sup> The FCC eventually liberated the market “known to the Bell Telephone-Western Electric complex as ‘foreign attachments.’”<sup>185</sup> These shamefully protectionist episodes bolstered the Averch-Johnson hypothesis that rate-regulated public utilities make systematically excessive and inefficient capital investments.<sup>186</sup> As the Bell monopoly sank into deep legal memory, the federal court supervising its wake took due note of the “unprecedented flowering of innovation” in American telephony after 1982, wondering why the government had waited so long to force divestiture.<sup>187</sup> Schumpeterian legends should be made of sterner stuff.<sup>188</sup>

This exclusive focus on monopoly versus competition may miss a larger point. The innovation markets debate’s heavy focus on incentives to invent, and thereby diverts attention from three other “sources and drivers of technical change”: opportunities to innovate, inventive capabilities, and “organizational arrangements and mechanisms through which technological

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184. See, e.g., *Hush-A-Phone Corp. v. United States*, 238 F.2d 266, 269 (D.C. Cir. 1956) (rejecting AT&T’s tariff provisions against foreign attachments “as an unwarranted interfering with the telephone subscriber’s right reasonably to use his telephone”); *In re Use of the Carterfone Device in Message Toll Tel. Servs.*, 14 F.C.C.2d 571, 572–73 (1968) (concluding that “the benefits of interconnection” to wireless services such as ship-to-shore radio outweighed the harm from any “‘cream skimming’ effect”). Compare *In re Use of Recording Devices in Connection with Tel. Serv.*, 11 F.C.C. 1033, 1036 (1948) (invalidating a broad tariff provision against “foreign attachment[s]”) with *Jordaphone Corp.*, 18 F.C.C. 644, 671 (1954) (prohibiting customers from connecting a primitive answering machine to AT&T’s phone lines). See generally Chen, *supra* note 145, at 843–44.

185. *Microwave Communications*, 18 F.C.C.2d at 978 (statement of Nicholas Johnson, Comm’r) (celebrating the introduction of “a little salt and pepper of competition” to the “rather tasteless stew of regulatory protection”). See generally Kearney & Merrill, *supra* note 24, at 1340–43 (describing the Bell System’s losing battle to maintain legal exclusivity in consumer premises equipment and long-distance carriage as prime examples of unbundling in the contemporary law of regulated industries).

186. See Harvey Averch & Leland L. Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052, 1059–67 (1962); see also Harold H. Wein, *Fair Rate of Return and Incentives—Some General Considerations, in PERFORMANCE UNDER REGULATION* 39 (Harry M. Trebing ed., 1968).

187. *United States v. Western Elec. Co.*, 890 F. Supp. 1, 9 (D.D.C. 1995), *vacated as moot*, 84 F.3d 1452 (D.C. Cir. 1996).

188. For the record, AT&T is no longer classified as a dominant interexchange carrier. See *In re Motion of AT&T Corp. to be Reclassified as a Nondominant Interexchange Carrier*, 11 F.C.C.R. 3271 (1995); cf. *Revision to Price Cap Rules for AT&T Corp.*, 10 F.C.C.R. 3009, 3014 (1995).

advances are searched for and implemented."<sup>189</sup> Dynamic factors such as an industry's susceptibility to competitive entry probably outweigh the static, structural issues at stake in the tussle between Schumpeter and Arrow.<sup>190</sup> In a field as "incompletely theorized" as this, the greatest hope for "principled consistency" may lie in resort to a powerful analogy.<sup>191</sup> In that spirit, avoided cost pricing under the Public Utilities Regulatory Policies Act of 1978 ("PURPA")<sup>192</sup> will now serve as a case study in innovation and technology policy within a regulated industry.

### *B. All the Power That the Market Will Wheel*

The leading example of technology-forcing through regulatory reform remains the full avoided cost rule that FERC adopted in order to implement PURPA's cogeneration and small power production provisions. Although price ceilings have often figured prominently in regulatory reform,<sup>193</sup> PURPA and the full avoided cost rule stand out because of FERC's conscious effort to change the trajectory of technological evolution in the electric utility industry. In the eyes of contemporary observers, PURPA was "one of the grand policy experiments of [its] generation."<sup>194</sup>

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189. Giovanni Dosi, *Opportunities, Incentives and the Collective Patterns of Technological Change*, 107 *ECON. J.* 1530, 1532 (1997).

190. Cf. Elizabeth E. Bailey & William J. Baumol, *Deregulation and the Theory of Contestable Markets*, 1 *YALE J. ON REG.* 111, 120 (1984) (observing that it is the threat of entry rather than the actual presence of a competitor "that disciplines incumbents and forces them to serve consumers efficiently").

191. See Cass R. Sunstein, *On Analogical Reasoning*, 106 *HARV. L. REV.* 741, 746 (1993) (touting the virtues of reasoning based on "principles operating at a low or intermediate level of abstraction").

192. Pub. L. No. 95-617, 92 Stat. 3117 (1978) (codified as amended in scattered sections of 15, 16, 26, 30, 42, and 43 U.S.C.).

193. Compare, e.g., *Permian Basin Area Rate Cases*, 390 U.S. 747, 797 (1968) (upholding the Federal Power Commission's use of maximum area rates as a stimulus for natural gas exploration and production) and *Public Serv. Comm'n v. Mid-Louisiana Gas Co.*, 463 U.S. 319, 334 (1983) (describing "new statutory rates" for natural gas as "intended to provide investors with adequate incentives to develop new sources of supply") with, e.g., *Farmers Union Cent. Exch., Inc. v. Federal Energy Reg. Comm'n*, 734 F.2d 1486, 1509-10 (D.C. Cir.) (invalidating an above-market price ceiling as an unlawful abandonment of FERC's statutory obligation to set "just and reasonable" rates), *cert. denied*, 469 U.S. 1034 (1984).

194. Dierdre O'Callaghan & Steve Greenwald, *PURPA from Coast to Coast: America's Great Electricity Experiment*, 10 *WTR NAT. RES. & ENV'T* 17, 17 (1996).

Section 210 of PURPA directed FERC to prescribe, within a year of the statute's enactment, rules requiring electric utilities to purchase power from qualifying cogeneration and small power production facilities.<sup>195</sup> The statutory requirements governing the pricing of purchases from qualifying facilities ("QFs") have remained unchanged since 1978. First, rates for electricity purchased from QFs "shall be just and reasonable to the electric consumers of the electric utility and in the public interest."<sup>196</sup> Second, such rates "shall not discriminate against qualifying cogenerators or qualifying small power producers."<sup>197</sup> Finally, FERC may not "prescribe[] . . . a rate which exceeds the incremental cost to the electric utility of alternative electric energy."<sup>198</sup> Such "incremental cost," also known as "avoided cost," is the cost to an "electric utility of the electric energy which, but for the purchase from such cogenerator or small power producer, such utility would generate or purchase from another source."<sup>199</sup>

FERC aggressively seized its mandate under PURPA. The Commission issued one rule requiring "electric utilities to purchase electric energy from cogenerators and small power producers at a rate equal to the purchasing utility's full avoided cost."<sup>200</sup> Another rule required "utilities to make such interconnections with cogenerators and small power producers as are necessary to effect [full avoided cost] purchases or sales of electricity."<sup>201</sup> FERC intended these transactions to reform an electricity generating industry that had not lost its appetite "for traditional fossil fuels" or its "reluctan[ce] to purchase power from, and to sell power to, . . . nontraditional facilities."<sup>202</sup>

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195. See 16 U.S.C. § 824a-3(a) (1994); *American Paper Inst., Inc. v. American Elec. Power Serv. Corp.*, 461 U.S. 402, 405 (1983).

196. 16 U.S.C. § 824a-3(b)(1) (1994).

197. *Id.* § 824a-3(b)(2).

198. *Id.* § 824a-3(b).

199. *Id.* § 824a-3(d); see also 18 C.F.R. § 292.101(b)(6) (1999) (defining "avoided cost" in almost exactly these terms, except insofar as FERC's definition includes not only actual energy but also "electric capacity").

200. *American Paper Inst., Inc. v. American Elec. Power Serv. Corp.*, 461 U.S. 402, 404 (1983).

201. *Id.* For FERC's original rules, see *Small Power Production & Cogeneration Facilities*, 45 Fed. Reg. 17,959 (1980); *Small Power Production & Cogeneration Facilities*, Order No. 69, 45 Fed. Reg. 12,214 (1980).

202. *Federal Energy Reg. Comm'n v. Mississippi*, 456 U.S. 742, 750 (1982) (footnote omitted); accord *American Paper Inst.*, 461 U.S. at 405, 417.

Confronted with FERC's aggressive implementation of Congress's call to reform the electric utility industry, recalcitrant incumbents and their allies in state public utility commissions challenged the federal government's constitutional authority.<sup>203</sup> Only when that effort failed did the opponents of deregulation attack the full avoided cost rule on its merits. The Supreme Court, however, unflinchingly upheld the full avoided cost rule as a proper discharge of FERC's statutory responsibility to set "just and reasonable" rates.<sup>204</sup>

By requiring utilities to pay full avoided cost, the Commission transformed a "statutory ceiling" into "the floor price" for electricity supplied by QFs.<sup>205</sup> Almost certainly influenced by the energy crisis of the 1970s,<sup>206</sup> the Supreme Court endorsed the agency's desire to "decrease . . . the Nation's dependence on fossil fuels" by promoting "increased development" of cogeneration and small power production.<sup>207</sup> The rule gave QFs a generous "range of privileges otherwise unavailable to any other entity," principally the power to force electric utilities to "purchase any energy and capacity offered to them."<sup>208</sup> Indeed, the rule arguably *created* the market for power from cogenerators and small power producers.<sup>209</sup> The competitive edge that QFs enjoyed *vis-à-vis* other generators "stem[ed] directly from the Congress's policy choice to encourage the sale of power by QFs

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203. See *Federal Energy Reg. Comm'n*, 456 U.S. 742.

204. See *American Paper Inst.*, 461 U.S. at 413-18.

205. See Steven J. Ferrey, *Shaping American Power: Federal Preemption and Technological Change*, 11 VA. ENVTL. L.J. 47, 78 (1991).

206. *Cf., e.g.,* Puerto Rico Dep't of Consumer Affairs v. Isla Petroleum Corp., 485 U.S. 495, 497-98 (1988) (describing Congress's passage of the Emergency Petroleum Allocation Act of 1973, Pub. L. No. 93-159, 87 Stat. 627, as a response to "severe market disruptions by an embargo on oil exports to the United States"); *Federal Energy Reg. Comm'n v. Mississippi*, 456 U.S. at 745 & n.2 (describing PURPA as "part of a package of legislation . . . designed to combat the nationwide energy crisis").

207. *American Paper Inst.*, 461 U.S. at 417; see also *Greensboro Lumber Co. v. Georgia Power Co.*, 643 F. Supp. 1345, 1368 n.28 (N.D. Ga. 1986) ("FERC has prescribed an above-market rate in order to encourage the development of qualifying facilities."), *aff'd*, 844 F.2d 1538 (11th Cir. 1988).

208. Ferrey, *supra* note 205, at 78.

209. See Bernard S. Black & Richard J. Pierce, Jr., *The Choice Between Markets and Central Planning in Regulating the U.S. Electricity Industry*, 93 COLUM. L. REV. 1339, 1348 (1993) ("PURPA . . . foster[ed] the rapid growth of an independent power production industry.").

rather than by traditional utilities.”<sup>210</sup> The high cost of building new capacity or of purchasing power from alternative sources only enhanced PURPA’s allure.<sup>211</sup> Cogenerators and small power producers eventually “accounted for more than half of new generating capacity brought on line in the United States.”<sup>212</sup>

At the same time, though, Congress also sought to limit the extent to which ratepayers were forced to finance PURPA’s implicit subsidy for QFs.<sup>213</sup> As long as “purchase rates [were] set at [a] utility’s avoided cost, consumers [were] not forced to subsidize QFs because they [were] paying the same amount they would have paid if the utility had generated energy itself or purchased energy elsewhere.”<sup>214</sup> Any other arrangement arguably would have violated the “consideration of potential rate savings to . . . consumers” dictated by PURPA’s requirement of “just and reasonable” rates.<sup>215</sup>

This compromise collapsed when the states took opposing views of their authority to prescribe *intrastate* QF rates *above* full avoided cost. One group of states, typified by New York, prescribed rates above the federal ceiling.<sup>216</sup> These states invoked FERC’s statement that “the States are free under their own authority, to enact laws or regulations providing for rates which would result in even greater encouragement” of cogeneration and small power production.<sup>217</sup> A competing group of states, typified by Kansas, disavowed any authority to order

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210. *Environmental Action, Inc. v. Federal Energy Reg. Comm’n*, 939 F.2d 1057, 1062 (D.C. Cir. 1991).

211. See Jeffrey D. Watkiss & Douglas W. Smith, *The Energy Policy Act of 1992—A Watershed for Competition in the Wholesale Power Market*, 10 YALE J. ON REG. 447, 453–54 (1993).

212. *Id.* at 454.

213. See *Greensboro Lumber Co. v. Georgia Power Co.*, 643 F. Supp. 1345, 136 n.30 (N.D. Ga. 1986); H.R. REP. NO. 1750, 95th Cong., 2d Sess. 98 (1978), reprinted in 1978 U.S.C.C.A.N. 7659, 7832; Steven R. Miles, *Full-Avoided Cost Pricing Under the Public Utilities Regulatory Policies Act: “Just and Reasonable” to Electric Consumers?*, 69 CORNELL L. REV. 1267, 1285 (1984).

214. *Independent Energy Producers Ass’n, Inc. v. California Pub. Utils. Comm’n*, 36 F.3d 848, 858 (9th Cir. 1994).

215. *American Power Inst., Inc. v. American Elec. Power Serv. Corp.*, 461 U.S. 402, 415 n.9 (1983).

216. See *Consolidated Edison Co. v. Public Serv. Comm’n*, 472 N.E.2d 981 (N.Y. 1984), *appeal dismissed*, 470 U.S. 1075 (1985).

217. *Small Power Production & Cogeneration Facilities*, Order No. 69, 45 Fed. Reg. 12,214, 12,221 (1980).

QF rates above full avoided cost.<sup>218</sup> Not surprisingly, New York, a net importer of fossil fuels, promoted alternative energy more aggressively than did Kansas, a net exporter of oil and natural gas. The Supreme Court's refusal in 1985 to resolve the dispute irreconcilably divided the states.<sup>219</sup>

But the full avoided cost rule had already run through half of its eventual lifespan. By 1988, FERC recognized that bidding was a more efficient alternative to administrative determination of avoided cost.<sup>220</sup> In the *Orange & Rockland Utilities* litigation, the Commission concluded that it was "no longer appropriate for states to impose rates exceeding avoided cost."<sup>221</sup> FERC then requested comments on whether to codify the *Orange & Rockland* position.<sup>222</sup> In subsequent proceedings, FERC set prices in QF contracts according to competitive bidding rather than an official determination of the purchasing utility's full avoided cost.<sup>223</sup> Although courts expressed confusion over the power of states to order QF rates above full avoided cost,<sup>224</sup> the Commission consistently preempted state-law orders and regulations that prescribed rates above this level.<sup>225</sup>

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218. See *Kansas City Power & Light Co. v. State Corp. Comm'n*, 676 P.2d 764 (Kan. 1984).

219. See *Consolidated Edison Co. v. Public Serv. Comm'n*, 470 U.S. 1075, 1077-78 (1985) (White, J., dissenting).

220. See *Administrative Determination of Full Avoided Costs*, FERC Statutes & Regulations §§ 292.304 to 292.306 (1988), summarized in 53 Fed. Reg. 9331-34 (1988); see also *Regulations Governing Bidding Programs*, 53 Fed. Reg. 9324 (1988); *Regulations Governing Indep. Power Producers*, 53 Fed. Reg. 9327 (1988).

221. *Orange & Rockland Utils., Inc.*, 43 F.E.R.C. ¶ 61,067, at 61,195 (1988), stayed, 43 F.E.R.C. ¶ 61,547, at 62,361 (1988), appeal dismissed sub nom. *Occidental Chem. Corp. v. Federal Energy Reg. Comm'n*, 869 F.2d 127 (2d Cir. 1989), dismissed as moot, 70 F.E.R.C. ¶ 61,012 (1995), reconsideration denied, 71 F.E.R.C. ¶ 61,034 (1995).

222. See *Administrative Determination of Full Avoided Costs*, 53 Fed. Reg. 24,099 (1988).

223. See, e.g., *Public Serv. Co. v. New Hampshire Elec. Coop.*, 83 F.E.R.C. ¶ 61,224, at 61,995-96, 62,000-01 & n.20 (1998); *Southern Cal. Edison Co.*, 70 F.E.R.C. ¶ 61,215, at 61,675-78, reconsideration denied, 71 F.E.R.C. ¶ 61,296, 62,078-80 (1995); *Enron Power Enter. Corp.*, 52 F.E.R.C. ¶ 61,193 (1990); *Doswell Ltd. Partnership*, 50 F.E.R.C. ¶ 61,251 (1990).

224. See, e.g., *Massachusetts Elec. Co. v. Department of Pub. Utils.*, 643 N.E.2d 1029, 1035 (Mass. 1994); cf. *Connecticut Light & Power Co. v. South E. Conn. Reg'l Resources Recovery Auth.*, 822 F. Supp. 888, 891 (D. Conn. 1993) (declining to address this question, preferring instead to defer to FERC's primary jurisdiction).

225. See *Southern Cal. Edison Co.*, 70 F.E.R.C. ¶ 61,215 (1995), reconsideration denied, 71 F.E.R.C. ¶ 61,269 (1995); *Connecticut Light & Power Co.*, 70 F.E.R.C. ¶ 61,012 (1995), reconsideration denied, 71 F.E.R.C. ¶ 61,035 (1995). For

The full avoided cost eventually outlived its usefulness. PURPA was not designed as a comprehensive response to flaws in the regulation of the electric utility industry. The statute was intended "to promote conservation of power resources and reduced reliance on oil, but not competition in wholesale power markets."<sup>226</sup> In addition to weaning incumbent utilities of their taste for large-scale, vertically integrated generating facilities,<sup>227</sup> PURPA's boost for cogeneration and small power production would enable the United States to realize the advantages of diverse and dispersed energy sources.<sup>228</sup> Neither the statute nor its initial implementation suggested a grander scheme to reconfigure the industry.

Comprehensive reform awaited the passage of the Energy Policy Act of 1992.<sup>229</sup> The 1992 Act created an entire category of independent power producers that swamped PURPA's narrower, technology-specific categories. The new legislation relieved an entire category of exempt wholesale generators ("EWG") of onerous registration requirements under the Public Utility Holding Company Act of 1935 ("PUHCA").<sup>230</sup> No longer did independent producers need to qualify under PURPA in order to evade PUHCA; it sufficed to satisfy the 1992 Act's simpler criteria defining an EWG.<sup>231</sup> The 1992 Act thus eliminated

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discussions of FERC's power under *Mississippi Power & Light Co. v. Mississippi ex rel. Moore*, 487 U.S. 354 (1988), and *Nantahala Power & Light Co. v. Thornburg*, 476 U.S. 953 (1986), to preempt state rate-making decisions, see Ferrey, *supra* note 205; Clinton A. Vince & John S. Moot, *Federal Preemption Versus State Utility Regulation in a Post-Mississippi Era*, 10 ENERGY L.J. 1 (1989).

226. Watkiss & Smith, *supra* note 211, at 453.

227. See *Federal Energy Reg. Comm'n v. Mississippi*, 456 U.S. 742, 750 (1982).

228. See F. Paul Bland, *Problems of Price and Transportation: Two Proposals to Encourage Competition from Alternative Energy Sources*, 10 HARV. ENVTL. L. REV. 345, 383 (1986); Charles G. Stalon & Reinier H.J.H. Lock, *State-Federal Relations in the Economic Regulation of Energy*, 7 YALE J. ON REG. 427, 448-49 (1990).

229. Pub. L. No. 102-486, 106 Stat. 2776 (codified as amended in scattered sections of 15, 16, 30, 42, and 43 U.S.C.). See generally Watkiss & Smith, *supra* note 211 (describing the impact of the 1992 Act on PURPA and the wholesale electricity market).

230. 15 U.S.C. §§ 79a-z6 (1994).

231. See *Administrative Determination of Full Avoided Costs*, 63 Fed. Reg. 51,310, 51,311 (1998).

many independent producers' need to create "PUHCA pretzels," a leading source of regulatory waste.<sup>232</sup>

More important, the 1992 Act gave FERC explicit authority to order wholesale wheeling for QFs and certain EWGs.<sup>233</sup> Before 1992, the Commission exacted competitive access concessions from electric utilities seeking favorable rates or merger approvals.<sup>234</sup> This incremental introduction of open access epitomized FERC's careful use of regulatory waivers to promote competition among electric utilities.<sup>235</sup> FERC Order No. 888, issued in 1996, represented the agency's biggest step to date toward comprehensive deregulation of the electric utility industry.<sup>236</sup> Whether or not they fit PURPA's definition of a QF, independent power producers now have open access to transmission services on a nondiscriminatory basis. Wholesale wheeling has dramatically transformed the full avoided cost rule's regulatory context.<sup>237</sup> The little vitality remaining in PURPA and its initial implementation has evaporated.

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232. See Jim Rossi, *Redeeming Judicial Review: The Hard Look Doctrine and Federal Regulatory Efforts to Restructure the Electric Utility Industry*, 1994 WIS. L. REV. 763, 783.

233. See 16 U.S.C. §§ 824j, 824k (1994). Wheeling is the "transfer by direct transmission or displacement [of] electric power from one utility to another over the facilities of an intermediate utility." *Otter Tail Power Co. v. United States*, 410 U.S. 366, 368 (1973).

234. See *Public Serv. Co. of Colo.*, 58 F.E.R.C. ¶ 61,322, at 62,034 (1992) (merger); *Northeast Utils. Serv. Co.*, 56 F.E.R.C. ¶ 61,269, at 62,010 (1991) (merger), *reh'g granted*, 57 F.E.R.C. ¶ 61,340 (1991), *modified*, 58 F.E.R.C. ¶ 61,070 (1992), *reh'g dismissed as moot*, 59 F.E.R.C. ¶ 61,089 (1992); *Public Serv. Comm'n of Ind.*, 51 F.E.R.C. ¶ 61,367, at 62,192 (1990) (market-based rates), *modified sub nom. PSI Energy, Inc.*, 52 F.E.R.C. ¶ 61,260 (1990), *clarified*, 53 F.E.R.C. ¶ 61,131 (1990), *appeal dismissed sub nom. Northern Indiana Pub. Serv. Co. v. Federal Energy Reg. Comm'n*, 954 F.2d 736 (D.C. Cir. 1992); *Utah Power & Light Co.*, 45 F.E.R.C. ¶ 61,095, at 61,288-89 (1988) (merger), *clarified*, 45 F.E.R.C. ¶ 61,132 (1988), *reh'g granted*, 45 F.E.R.C. ¶ 61,500 (1988), *reh'g granted in part*, 47 F.E.R.C. ¶ 61,209 (1989), *enforced*, 51 F.E.R.C. ¶ 61,295 (1990), *remanded on other grounds sub nom. Environmental Action, Inc. v. Federal Energy Reg. Comm'n*, 939 F.2d 1057 (D.C. Cir. 1991). See generally Donald F. Santa, Jr. & Clifford S. Sikora, *Open Access and Transition Costs: Will the Electric Industry Transition Track the Natural Gas Industry Restructuring?*, 15 ENERGY L.J. 273, 293 n.103 (1994).

235. See generally Jim Rossi, *Making Policy Through the Waiver of Regulations at the Federal Energy Regulatory Commission*, 47 ADMIN. L. REV. 255 (1995).

236. See *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Servs. by Pub. Utils.*, FERC Order No. 888, 61 Fed. Reg. 21,540 (1996).

237. See *Public Serv. Co. v. New Hampshire Elec. Coop.*, 83 F.E.R.C. ¶ 61,224, at 61,999 (1998) (announcing, with enormous understatement, that the "regulatory context" since 1978 has become "quite different" over the course of two decades).

By the time FERC revisited full avoided cost pricing in 1998, "well over half the states" had adopted "competitive bidding to one degree or another in setting avoided cost rates."<sup>238</sup> The Commission thereupon terminated a proposed revision of the full avoided cost rule.<sup>239</sup> With the "introduction of competitive bidding" for QF contracts, PURPA's contribution to the deregulation of electric power generation in the United States expired.<sup>240</sup>

FERC's current rules forswear any intention of "requir[ing] any electric utility to pay more than the avoided cost for purchases" from qualifying cogenerators and small power producers.<sup>241</sup> FERC affirmatively states that a "rate for purchases" from a QF "may be less than . . . avoided cost if the [relevant] State regulatory authority . . . or the nonregulated electric utility determines that a lower rate" does not discriminate against QFs "and is sufficient to encourage cogeneration and small power production."<sup>242</sup> There is no legal significance in the regulations' failure to dictate an outright ban.<sup>243</sup> The policy announced in *Orange & Rockland*, which has remained in force since 1988, preempts a state order that forces a regulated utility to pay prices above full avoided cost for QF-supplied power.

Though there is no longer any obligation to buy QF power at full avoided cost, one last surprise remains. Rather remarkably, some utilities responded to the full avoided cost rule by locking themselves into long-term, take-or-pay contracts that wildly overestimated the future price of fossil fuels.<sup>244</sup> To be sure, a similar pessimism about future energy supplies gripped the natural gas market during the late 1970s and early

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238. Administrative Determination of Full Avoided Costs, 63 Fed. Reg. 51,310, 51,312 (1998).

239. *See id.*

240. *See* Richard D. Cudahy, *PURPA: The Intersection of Competition and Regulatory Policy*, 16 ENERGY L.J. 419, 425 (1995).

241. 18 C.F.R. § 292.304(a)(2) (1999).

242. *Id.* § 292.304(b)(3).

243. *Cf.* *United Steelworkers v. Weber*, 443 U.S. 193, 205-06 (1979) (concluding that Congress's failure to ban race-based "preferential treatment" in employment gave rise to a "natural inference" permitting some forms of "voluntary race-conscious affirmative action").

244. *See, e.g.,* *Independent Energy Producers Ass'n, Inc. v. California Pub. Utils. Comm'n*, 36 F.3d 848, 858 (9th Cir. 1994). *See generally* Richard J. Pierce, Jr., *Using the Gas Industry as a Guide to Reconstituting the Electricity Industry*, 13 RES. IN L. & ECON. 7 (1991).

1980s.<sup>245</sup> Moreover, FERC bears part of the blame insofar as it allowed avoided cost to be computed when a QF contract is *entered*.<sup>246</sup> If they are alive today, the regulators and commentators who in 1980 “stressed the need for certainty with regard to return on investment in new technologies”<sup>247</sup> have obviously failed to exploit the explosive venture capital market for internet-based investments.

The electric utilities themselves, however, must shoulder primary responsibility for this disaster. Their shortsightedness is nothing short of astonishing. PURPA and the full avoided cost rule were calculated to stimulate technological innovation and thereby to *lower* the cost of alternative power generation over time. Technology-forcing measures, in economic regulation as in environmental law,<sup>248</sup> are intended to lower costs, or at least to improve productivity at a given level of expenditures. In the nastiest twist of PURPA’s story, lingering obligations under take-or-pay contracts undertaken to satisfy full avoided cost purchase obligations under PURPA now constitute some of the stranded costs at issue in state laws addressing the the electric utility industry’s ongoing deregulatory transition.<sup>249</sup>

### C. *Tomorrow and Tomorrow and Tomorrow: The Death of the Regulatory Compact*

The innovation markets debate and the story of PURPA enrich the quest for intergenerational equity in telecommunica-

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245. See, e.g., *Mobil Oil Expl. & Prod. S.E. Inc. v. United Distrib. Cos.*, 498 U.S. 211, 218 (1991); *Associated Gas Distribs. v. Federal Energy Reg. Comm’n*, 824 F.2d 981, 995–96, 1021 (D.C. Cir. 1987), *cert. denied*, 485 U.S. 1006 (1988); Richard J. Pierce, Jr., *Reconstituting the Natural Gas Industry from Wellhead to Burnertip*, 9 ENERGY L.J. 1, 8–16 (1988).

246. See 18 C.F.R. § 292.304(d)(2) (1999).

247. *Small Power Production & Cogeneration Facilities*, 45 Fed. Reg. 12,214, 12,224 (1980).

248. See, e.g., *Chemical Mfrs. Ass’n v. Natural Res. Defense Council, Inc.*, 470 U.S. 116, 155–56 (1985) (Marshall, J., dissenting); *Union Elec. Co. v. EPA*, 427 U.S. 246, 257 (1976); *Train v. Natural Res. Defense Council, Inc.*, 421 U.S. 60, 91 (1975); *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201, 1220–21 (5th Cir. 1991); *United Steelworkers v. Marshall*, 647 F.2d 1189, 1264–65 (D.C. Cir. 1980); *AFL-CIO v. Brennan*, 530 F.2d 109, 121 (3d Cir. 1975); *Chrysler Corp. v. Department of Transp.*, 472 F.2d 659, 673 (6th Cir. 1972).

249. See *Indianapolis Power & Light Co. v. Pennsylvania Util. Comm’n*, 711 A.2d 1071, 1074 n.4 (Pa. Commw. Ct. 1998) (recognizing liabilities under “contracts to purchase electricity from qualifying facilities under” PURPA as a category of stranded costs confronting electric utilities in Pennsylvania).

tions law. The former supplies theoretical rigor; the latter, a dose of sober realism from FERC's record of mixed success. These outside sources of wisdom temper telecommunications law's internal fights over stranded costs and universal service. Much of the nuance in the debate vanishes if we describe the contrast between TELRIC and e-rate controversies strictly in terms of simple intergenerational struggle between past investors and future consumers. Only by surveying the entire terrain can we perceive two fundamental questions underlying all disputes in the law of antitrust and economic regulation. First, which sort of market structure, concentrated or decentralized, better advances the welfare of future generations in general and the cause of technological innovation in particular? Second, to what extent can aggressive regulatory intervention catalyze technological and economic progress, without inflicting unintended injury to these very interests?

PURPA achieved qualified success in promoting technological innovation and deregulating the electric utility industry. The relatively competitive nature of electric power generation in the United States today is an unintended byproduct of the energy crisis of the 1970s. For all its faults, PURPA in retrospect is rightly "hailed as the measure introducing competition into the electric utility industry and thereafter aggressively advancing it."<sup>250</sup> The full avoided cost rule and FERC's eventual transition to competitive bidding have established "competition *for* a market, rather than [mere] competition *within* a market."<sup>251</sup>

The decentralized electricity-generating technology that PURPA supported also exposes stranded cost controversies as last-ditch legal stratagems concocted by firms committed to outmoded technology. By 1989, when incumbent electric utilities launched their constitutional complaint of last resort against hostile ratemaking treatment of cancelled nuclear power plants,<sup>252</sup> their centralized model was already woefully obsolete.<sup>253</sup> The revolution in cogeneration and small power

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250. Cudahy, *supra* note 240, at 425.

251. *Id.* (emphasis in original); see also Douglas Gegax & Kenneth Nowotny, *Competition and the Electric Utility Industry: An Evaluation*, 10 YALE J. ON REG. 63, 82-83 (1993).

252. See *Duquesne Light Co. v. Barasch*, 488 U.S. 299 (1989).

253. See generally Richard J. Pierce, Jr., *The Regulatory Treatment of Mistakes in Retrospect: Canceled Plants and Excess Capacity*, 132 U. PA. L. REV. 497

production, which PURPA sparked, has forever broken the grip of vertical integrated utility companies that bundled large-scale power production with wholesale transmission and retail distribution.

On the other hand, PURPA did distort the path of technological evolution in electricity. Rather than invest in the most efficient means of power generation, entrants manipulated their technology to match the cogeneration and small power production criteria stipulated in the statute.<sup>254</sup> In any event, PURPA had modest promise at most; the statute's power to reform the electric utility industry was contingent upon "booming economies and large industrial bases."<sup>255</sup> And rather perversely, QF contracts have in some instances exacerbated this industry's stranded cost problem. On balance, there may be no way to account for all gains and losses under PURPA. "[N]o analysis has yet quantified the impacts of PURPA on consumer prices, the quality of service, and structural change."<sup>256</sup>

The history of the full avoided cost rule does unambiguously illuminate the deep structure of the political economy of regulation. The full avoided cost rule feels like the electric utility's analogue of TELRIC. The first two rounds of litigation over PURPA eerily foreshadowed the controversy that would eventually engulf TELRIC.<sup>257</sup> PURPA endured one jurisdictional attack, only to confront another on the merits of the full avoided cost initiative. Likewise, incumbent local carriers began their assault on the Telecommunications Act in the *Iowa Utilities Board* litigation by attacking the FCC's jurisdiction. They are now poised to attack TELRIC on its merits as an uncompensated taking. In a reversal of the electric utilities' strategy, the opponents of telecommunications reform have assailed federal jurisdiction on administrative law grounds and conserved their constitutional ammunition for an all-out assault on TELRIC's merits. When confronted with deregulation, especially in the form of agency initiatives, incumbent firms

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(1984); Sean P. Madden, Note, *Takings Clause Analysis of Utility Ratemaking Decisions: Measuring Hope's Investor Interest Factor*, 58 FORDHAM L. REV. 427 (1989).

254. See Rossi, *supra* note 232, at 782.

255. *Id.*

256. Peter S. Fox-Penner, *Cogeneration After PURPA: Energy Conservation and Industrial Structure*, 33 J.L. & ECON. 517, 546 (1990).

257. See Chen, *supra* note 51, at 1548.

will launch obstructive litigation. Call it SLAPP of a different stripe: Strategic Litigation Against Public Progress.

Moreover, the most spectacular failures under PURPA may be attributed to excessive regulation and the astounding ineptitude of incumbent utilities in interpreting economic signals. In retrospect, states that set QF rates above full avoided cost did little to stimulate further innovation in cogeneration and small power production. These states succeeded merely in shifting wealth from ratepayers to QF owners and operators. By setting above-market prices for alternative sources of electricity, these states also encouraged incumbent electric utilities to negotiate regrettably overpriced QF contracts. To the extent that those take-or-pay liabilities are now the subject of stranded cost recovery schemes, ratepayers are being doubly gouged.

Past also serves as theoretical prologue. The trajectories of the telecommunications industry after the Bell breakup and of the electric utility industry after PURPA suggest that Arrow holds the upper hand in a static analysis of innovation markets. Concentrated markets, including those of firms historically regulated under the public utility model, seem to enjoy a technological renaissance once subjected to corrosive, competitive entry. But this very observation paradoxically supports the Schumpeterian hypothesis. Creative destruction spells doom for old ways. In rate- and entry-regulated industries, creative destruction through deregulation unlocks wealth hitherto held by the entrenched plutocracy of incumbent utilities and their shareholders. New entry releases that wealth for redistribution through technological innovation and economic restructuring.<sup>258</sup>

It is therefore time to declare the death of the regulatory compact. If ever that metaphor helped describe the relationship between government and the shareholder-owned public utility, that usefulness has passed. The internet age belongs to firms and venture capitalists who will invest vast sums with absolutely no assurance of return, much less vague governmental promises not to alter the regulatory rules of engagement. But the regulatory compact metaphor is now worse than useless. Exploited in the poisonous effort to invalidate TELRIC as

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258. See generally MANCUR OLSON, *THE RISE AND DECLINE OF NATIONS* (1982).

a “deregulatory taking,” the regulatory compact metaphor has become affirmatively toxic. Let us dispose of it quickly and permanently.

Better than any other contemporary jurist, Justice Stephen Breyer illustrates the deleterious effects of the regulatory compact metaphor. A full generation ago, then-Professor Breyer’s pathbreaking critique of excessive protection in copyright law, celebrated the advantages enjoyed by first movers and praised the prospect of innovation even in the absence of assured return on investment.<sup>259</sup> Even a decade and a half ago, then-Judge Breyer could still be heard to question the federal judiciary’s institutional competence to fashion economic policies demanding great expertise and sound discretion.<sup>260</sup> By 1999, however, Justice Breyer became the only member of the Supreme Court to write approvingly of the deregulatory takings theory that animated the *Iowa Utilities Board* litigation.<sup>261</sup> A phantom menace looms.

#### IV. THE TRIUMPH OF THE THIRD BEST

Will no one tell me what she sings?—  
Perhaps the plaintive numbers flow  
For old, unhappy, far-off things,  
And battles long ago;

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259. See Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281 (1970). See generally William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325 (1989).

260. See Stephen Breyer, *Judicial Review of Questions of Law and Policy*, 38 ADMIN L. REV. 363, 388–94 (1986); cf. Richard J. Pierce, Jr., *Public Utility Regulatory Takings: Should the Judiciary Attempt to Police the Political Institutions?*, 77 GEO. L.J. 2031, 2033 (1989) (discouraging judicial displacement of “superior [political] solution[s] [for] replacing the wholesale electric market with a competitive market”).

261. See *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 425–27 (1999) (Breyer, J., concurring in part and dissenting in part) (citing, *inter alia*, J. Gregory Sidak & Daniel F. Spulber, *The Tragedy of the Telecommons: Government Pricing of Unbundled Network Elements Under the Telecommunications Act of 1996*, 97 COLUM. L. REV. 1081, 1095–98, 1111–13 & nn.75–85 (1997)).

Or is it some more humble lay,  
 Familiar matter of to-day?  
 Some natural sorrow, loss, or pain,  
 That has been, and may be again?

William Wordsworth, *The Solitary Reaper*<sup>262</sup>

In an imperfect world, half a loaf is often worse than none. Second-best alternatives to ideal legal solutions can backfire, achieving little more than the illusion of improvement.<sup>263</sup> This article's sweep of contemporary doctrine, economic theory, and legal history supports a "third best" approach to innovation and intergenerational wealth transfers in rate- and entry-regulated industries. In lieu of forecasting specific winners and losers in technology's inherently unpredictable pageant, regulators may enjoy far greater success simply by choosing "among alternative general policies" and "adopt[ing] the policy that on average has the most favorable . . . implication" for innovation.<sup>264</sup>

Deregulation, in other words, contains its own technology policy, and a successful one at that. A corrosive assault on incumbency may outperform even the most meticulously planned of universal service strategies. In response to calls for the imposition of interconnection and unbundling obligations on newer technologies such as cable modems, the wisdom of the third best counsels great caution before adopting new regulatory restraints.<sup>265</sup>

Change, alas, exacts a steep price. More than a century ago, the Supreme Court recognized that "the inevitable accompaniment of change and improvement" was economic death for "small dealers and [the] worthy men whose lives have been spent" in a single line of business.<sup>266</sup> Yet the failure of individ-

262. WILLIAM WORDSWORTH, *The Solitary Reaper*, in *THE COMPLETE POETICAL WORKS OF WILLIAM WORDSWORTH* 192 (London, Macmillan 1905) (lines 17-24); accord *Kaiser Aetna v. United States*, 444 U.S. 164, 177 (1979).

263. See R.G. Lipsey & Kelvin Lancaster, *The General Theory of Second Best*, 24 *REV. ECON. STUD.* 11 (1956); see also Mario J. Rizzo, *The Mirage of Efficiency*, 8 *HOFSTRA L. REV.* 641, 652 (1980) ("The general theory of second best demonstrates that if there are distortions from competitive equilibrium throughout the economy due to taxes or monopoly, for example, a change that can be viewed as value maximizing in one small sector may actually decrease value overall." (footnote omitted)).

264. SCHERER & ROSS, *supra* note 175, at 37.

265. See Weiser, *supra* note 21, at 830-31.

266. *United States v. Trans-Missouri Freight Ass'n*, 166 U.S. 290, 323 (1897) (lamenting the "misfortunes" of entrepreneurs who are "driv[en] out of business" by unbridled competition).

ual firms is precisely what makes "capitalism and competitive markets" possible.<sup>267</sup> Worse still, the urge to shield certain losers from the agony of legal change overlooks other "forgotten victims,"<sup>268</sup> even greater losers who truly lack power to navigate and manipulate the political economy of regulatory reform. The "discrete and insular" interests at the heart of the American constitutional tradition<sup>269</sup> are, perversely enough, the very interests that wield maximum political power and therefore least deserve judicial solicitude.<sup>270</sup> By contrast, the interests of consumers and future generations are at best underenforced and in most other circumstances ignored outright.<sup>271</sup> *Failure* to change, after all, exacts a price of its own. Stagnation is a tax on future generations.

"Law, for want of a better justification, is about losers."<sup>272</sup> Correlatively, the compensation of losers is perhaps government's highest calling.<sup>273</sup> When a commitment to competition inflicts losses deemed worthy of compensation, the law faces what is arguably its greatest challenge. Every law touching the economy is a form of public finance.<sup>274</sup> Telecommunications regulation is no exception. Public utility law has historically effected wealth transfers through internal cross-subsidies,

267. See LESTER THUROW, *THE ZERO-SUM SOCIETY* 21 (1980); accord McArthur, *supra* note 78, at 800.

268. Cf. Suzanna Sherry, *The Forgotten Victims*, 63 U. COLO. L. REV. 375 (1992) (arguing that an obsession with racial discrimination often overshadows other, arguably more pressing claims of victimization).

269. See *United States v. Carolene Prods. Co.*, 304 U.S. 144, 152-53 n.4 (1938). See generally, e.g., JOHN HART ELY, *DEMOCRACY AND DISTRUST* 75-104 (1980) (grounding the "representation-reinforcing" theory of judicial review in footnote four of *Carolene Products*).

270. See, e.g., DANIEL A. FARBER & PHILIP P. FRICKEY, *LAW AND PUBLIC CHOICE: A CRITICAL INTRODUCTION* 12-37 (1991); Bruce Ackerman, *Beyond Carolene Products*, 98 HARV. L. REV. 713 (1985); Geoffrey P. Miller, *Public Choice at the Dawn of the Special Interest State: The Story of Butter and Margarine*, 77 CAL. L. REV. 83 (1989); Geoffrey P. Miller, *The True Story of Carolene Products*, 1987 SUP. CT. REV. 397, 422-23.

271. See generally Lawrence Gene Sager, *Fair Measure: The Legal Status of Underenforced Constitutional Norms*, 91 HARV. L. REV. 1212 (1978).

272. Jim Chen, *Globalization and Its Losers*, 9 MINN. J. GLOBAL TRADE 157, 216 (2000).

273. See Jim Chen, *Fugitives and Agrarians in a World Without Frontiers*, 18 CARDOZO L. REV. 1031, 1040 (1996) ("The proper distribution of wealth and income within society represents . . . the principal justification for the positive state.").

274. See generally Jim Chen & Daniel J. Gifford, *Law as Industrial Policy: Economic Analysis of Law in a New Key*, 25 U. MEMPHIS L. REV. 1315, 1356-57 (1995).

through "taxation by regulation."<sup>275</sup> Public utilities are in this sense "tax collectors *par excellence*."<sup>276</sup>

If inflation is "the form of taxation which the public find[s] hardest to evade and even the weakest Government can enforce,"<sup>277</sup> the Telecommunications Act is by comparison an elaborate scheme to "tax" certain parties and to "spend" the wealth thus derived on behalf of others. What ordinary discourse calls "taxation" fully describes the regulatory process. The state wields various

powers . . . to extract money from its subjects in order (1) to defray the cost of services that . . . the state wish[es] to provide and that the market would not provide in the desired quantity and at the desired price, or (2) to transfer money from one group to another, or (3) often, to do both.<sup>278</sup>

"Internal subsidization" through the manipulation of carriers' rates effectively imposes "a form of excise tax, with the burden falling on purchasers of certain goods or services, and the proceeds earmarked for specific uses."<sup>279</sup>

The wisdom of the third best counsels an alternative to taxation by regulation. Subsidies made possible by restraints on entry and exit are distorting at best and destructive at worst. International trade agreements and dormant commerce clause cases recognize the "distinction between ordinarily lawful subsidies and ordinarily [unlawful] efforts to discriminate through taxation or regulation."<sup>280</sup> So should the transformed law of economic regulation and deregulation. Redistribution based on the government's own limited funds is transparent

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275. See Richard Posner, *Taxation by Regulation*, 2 BELL J. ECON. & MGMT. SCI. 22 (1971); cf. *C&A Carbone, Inc., v. Town of Clarkstown*, 511 U.S. 383, 393 (1994) (describing a "flow control ordinance" channeling a town's solid waste stream as a "financing measure" designed to bankroll the franchised transfer station receiving the waste); Susan P. Schoettle & David G. Richardson, *Nontraditional Uses of the Utility Concept to Fund Public Facilities*, 25 URB. LAW. 519 (1993) (describing exclusive franchising coupled with ratemaking as an alternative to less politically viable means of public finance).

276. See ELI W. CLEMENS, *ECONOMICS AND PUBLIC UTILITIES* 526 (1950).

277. JOHN MAYNARD KEYNES, *A TRACT ON MONETARY REFORM* 37 (MacMillan 1971) (1935).

278. Posner, *supra* note 275, at 28-29.

279. *Id.* at 29.

280. Jim Chen, *Foreword: Filburn's Forgotten Footnote—Of Farm Team Federalism and Its Fate*, 82 MINN. L. REV. 249, 311 (1997).

and can be countered by the ordinary political process.<sup>281</sup> Some "significant group of . . . citizens . . . can be counted upon to use their votes to keep [government] from raising [any] tax excessively."<sup>282</sup> The same cannot be said of less easily detected regulatory intrusions into the marketplace. Far more than a "minimal administrative difference" separates tax-based redistribution from its regulatory counterpart.<sup>283</sup>

In other words, the third-best substitute for taxation by regulation is taxation *without* regulation. Tax, then spend. In the taming of natural monopolies, as in every other governmental enterprise, "[t]axes are what we pay for civilized society."<sup>284</sup>

Nowhere is this cry more urgent than in controversies over stranded costs. The treatment of stranded costs is perhaps the surest "barometer of how truly policymakers believe in competition."<sup>285</sup> Very well, then. Deregulation is the order of the age; let stranded costs lie where they fall. Judicially crafted stranded cost remedies are even worse than their legislative counterparts. Courts historically have undervalued ratepayer interests in cases alleging confiscatory ratemaking.<sup>286</sup> That trend should stop right away. "Courts should narrowly construe statutes that serve no plausible public purpose, and amount merely to interest-group transfers."<sup>287</sup> Even when their scale approaches billions of dollars, stranded costs have a "rela-

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281. See, e.g., Richard B. Collins, *Economic Union as a Constitutional Value*, 63 N.Y.U. L. REV. 43, 103 (1988); Mark P. Gergen, *The Selfish State and the Market*, 66 TEX. L. REV. 1097, 1138 (1988).

282. *Washington v. United States*, 460 U.S. 536, 545 (1983); accord *West Lynn Creamery, Inc. v. Healy*, 512 U.S. 186, 200 n.17 (1994); *South Carolina v. Baker*, 485 U.S. 505, 525-26 n.15 (1988); cf. *Fulton Corp v. Faulkner*, 516 U.S. 325, 342 (1996) (invoking the "general difficulty of comparing the economic incidence of state taxes paid by different taxpayers upon different transactions" as a reason for viewing such taxes with constitutional suspicion).

283. *Contra Indianapolis Power & Light Co. v. Pennsylvania Pub. Util. Comm'n*, 711 A.2d 1071, 1077 n.8 (Pa. Commw. Ct. 1998).

284. *Compania General de Tabacos v. Collector of Internal Revenue*, 275 U.S. 87, 100 (1927) (Holmes, J., dissenting).

285. McArthur, *supra* note 78, at 780.

286. See John N. Drobak, *From Turnpike to Nuclear Power: The Constitutional Limits on Utility Rate Regulation*, 65 B.U. L. REV. 65, 94-96 (1985).

287. Cass R. Sunstein, *Interpreting Statutes in the Regulatory State*, 103 HARV. L. REV. 405, 486 (1989).

tively trivial" impact on "social welfare."<sup>288</sup> Their recovery "irrational[ly] . . . jeopardize[s] [the] attainment of scores of billions of dollars in social welfare gains."<sup>289</sup>

In an age of burgeoning competition, "regulatory reforms," and "technological progress," the "reconstitutionalization" of public utility . . . regulation" would be "a great mistake."<sup>290</sup> "[I]nvestors' interest," lest the point be forgotten, "provide[s] only one of the variables in the constitutional calculus of reasonableness."<sup>291</sup> Incumbent utilities seeking to recover stranded costs from a captive ratepayer base must allege and prove a threat to "financial integrity," not a mere loss of revenue or an even less substantial "lack of flexibility."<sup>292</sup> Constitutional hostility to "naked wealth transfers," especially at the expense of the politically disempowered, demands no less.<sup>293</sup>

The cure for universal service is equally simple. No one seriously disputes the desirability, or at least the plausibility, of a public role in ensuring educational access to the internet. Doing so through a general tax rather than an internal subsidy drawn from other telecommunications users would not only simplify the administration of the Telecommunications Act but also improve overall economic welfare.

All too appropriately, the intergenerational approach can serve telecommunications law even after the TELRIC and e-rate controversies have disappeared. The law of regulated industries in general and telecommunications law in particular can give legal effect to intergenerational justice through the "public interest" standard. "[T]he words 'public interest' in a regulatory statute . . . [should] take meaning from the purposes

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288. Richard J. Pierce, Jr., *The Unintended Effects of Judicial Review of Agency Rules: How Federal Courts Have Contributed to the Electricity Crisis of the 1990s*, 43 ADMIN. L. REV. 7, 22 (1991).

289. *Id.* at 21.

290. Goldsmith, *supra* note 79, at 276.

291. *Permian Basin Area Rate Cases*, 390 U.S. 747, 769 (1968); *accord* *FCC v. Florida Power Corp.*, 480 U.S. 245, 253 (1987); *see also* *Covington & Lexington Turnpike Rd. Co. v. Sanford*, 164 U.S. 578, 596 (1896) ("[S]tockholders are not the only persons whose rights or interests are to be considered. The rights of the public are not to be ignored.").

292. *See City of Los Angeles v. United States Dep't of Transp.*, 165 F.3d 972, 980 (D.C. Cir. 1999).

293. *See* Sunstein, *supra* note 287, at 471. *See generally* Cass R. Sunstein, *Naked Preferences and the Constitution*, 84 COLUM. L. REV. 1689 (1984).

of the regulatory legislation.<sup>294</sup> Although the Telecommunications Act is often criticized for being “a model of ambiguity or indeed even self-contradiction” rather than a “model of clarity,”<sup>295</sup> “the term ‘public interest’ . . . is not a concept without ascertainable criteria.”<sup>296</sup> Armed with a “public interest” standard that is as “supple” and “as concrete as the complicated factors for judgment in such a field of delegated authority permit,”<sup>297</sup> the FCC should invoke its “wide discretion” to engage in “imaginative interpretation.”<sup>298</sup>

The Telecommunications Act is far from irredeemably broken. “[C]ompared to the historic pace of competition in network communications,” the Act is a success.<sup>299</sup> Imparting some concrete meaning to the public interest standard would invigorate the interpretation and implementation of the Act. This standard can and should be interpreted in light of the “policy of the United States to encourage the provision of new technologies and services to the public.”<sup>300</sup> At the very least, advancing the “public interest” means that law and government should generally eschew policies that waste resources or benefit the few at the expense of the many.<sup>301</sup> Surely it is not too much to inject some notion of responsibility toward the future into a body of law dedicated to markets “affected with a public interest.”<sup>302</sup> Profound concern for future generations is a bedrock principle of environmental law and scholarship.<sup>303</sup> Telecom-

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294. *NAACP v. Federal Power Comm'n*, 425 U.S. 662, 669 (1976); *accord* *American Paper Inst., Inc. v. American Elec. Power Serv. Corp.*, 461 U.S. 402, 417 (1983).

295. *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 397 (1999); *accord* *Texas Office of Pub. Util. Counsel v. FCC*, 183 F.3d 393, 449 (5th Cir. 1999); *Puerto Rico Tel. Co. v. Telecommunications Regulatory Bd.*, 189 F.3d 1, 19 (1st Cir. 1999); *Sprint Spectrum, L.P. v. Willoth*, 176 F.3d 630, 641 (2d Cir. 1999).

296. *New York Cent. Sec. Corp. v. United States*, 287 U.S. 12, 25 (1932).

297. *FCC v. Pottsville Broadcasting Co.*, 309 U.S. 134, 138 (1940).

298. *See FCC v. RCA Comm'ns, Inc.*, 346 U.S. 86, 90 (1953).

299. Berresford, *supra* note 114, at 755.

300. 47 U.S.C. § 157(a) (Supp. III 1997); *see* Hausman & Shelanski, *supra* note 109, at 27–28.

301. *See generally* John F. Duffy, *The FCC and the Patent System: Progressive Ideals, Jacksonian Realism, and the Technology Of Regulation*, 71 U. COLO. L. REV. 1071 (2000).

302. *See* *Munn v. Illinois*, 94 U.S. 113, 130 (1876).

303. *See generally, e.g.*, DONALD E. DAVIS, *ECOPHILOSOPHY: A FIELD GUIDE TO THE LITERATURE* (1989); RODERICK FRAZIER NASH, *THE RIGHTS OF NATURE: A HISTORY OF ENVIRONMENTAL ETHICS* (1989); Annette Baier, *For the Sake of Future*

munications regulation should likewise adopt a “continuing policy of the Federal Government . . . [to] fulfill the social, economic, and other requirements of present and future generations.”<sup>304</sup>

Technological and legal transitions mark the generations of telecommunications law. No less than other legal missions, the regulation of business constitutes “a covenant running from the first generation of [citizens] to us and then to future generations.”<sup>305</sup> Telecommunications regulation “is a coherent succession” based on a charter whose “written terms embody ideas and aspirations that must survive more ages than one.”<sup>306</sup> We should interpret telecommunications law’s foundational document as if it had been adopted “in Order to . . . secure the Blessings of Liberty to ourselves and our Posterity.”<sup>307</sup> Ah, if only the makers of American telecommunications policy could be “set upon a golden bough to sing” not only “[o]f what is past,” but also of that which is “passing, or to come.”<sup>308</sup> We might yet “beh[old]d white shores and beyond them a far green country under a swift sunrise.”<sup>309</sup>

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*Generations*, in *EARTHBOUND: NEW INTRODUCTORY ESSAYS IN ENVIRONMENTAL ETHICS* 214 (Tom Regan ed., 1984).

304. 42 U.S.C. § 4331(a) (1994); *see also id.* § 4331(b)(1) (describing “the responsibilities of each generation as trustee of the environment for succeeding generations”); *cf.* 16 U.S.C. § 1 (1994) (directing the National Park Service duty to manage parks “in such manner and by such means as will leave them unimpaired for the enjoyment of future generations”); 43 U.S.C. § 1702(c) (1994) (requiring the “multiple use” of public land to “take[ ] into account the long-term needs of future generations”).

305. *Planned Parenthood v. Casey*, 505 U.S. 833, 901 (1992).

306. *Id.*

307. U.S. CONST. preamble.

308. WILLIAM BUTLER YEATS, *Sailing to Byzantium*, in 1 *THE COLLECTED WORKS OF W.B. YEATS* 193, 194 (1927) (Richard J. Finneran ed., 1989) (1927) (lines 30, 32).

309. J.R.R. TOLKIEN, *THE RETURN OF THE KING* 310 (2d ed. 1965).

