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Net Regulation : Taking Stock and Looking Forward

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NET REGULATION: TAKING STOCK AND LOOKING FORWARD

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INTRODUCTION

Imagine that there were an American Administration in the second half of the fifteenth century. Imagine that it issued its major policy statement on the introduction of printing, entitled "Framework for Print-Based Commerce." And imagine that, after two or three perfunctory sentences about how print would revolutionize religion, science, language, and political discourse, the statement went on to focus its policy planning exclusively on making sure that the print environment was safe for glossy magazine advertisements, that printed order forms and back-of-the-form standard contracts were enforceable, and that publishers of popular novels had copyright protection. If this sounds silly, then you should take a look at the Administration's Framework for Global Electronic Commerce[1] from 1997.

Fear not—I have no intention of boring you with a tedious review of a three-year-old document in an area in which those three years account for about half the life of public concern with the issue—internet regulation. My description of the document is here merely to motivate an exercise I think we are almost ready for in "Net"[2] regulation—taking stock and evaluating our direction.

In order to separate, at least initially, the task of taking stock from the inevitable normative bias entailed by one's own sense of what things are "important," the basic text of this evaluation was developed by a rather mechanistic method.

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1. *See* The White House, *A Framework for Global Electronic Commerce* (July 1, 1997) <http://www.ecommerce.gov/framewrk.htm>.

2. I use the term "Net" to describe, most obviously, the internet, but more generally "the digitally networked environment," whose clearest manifestation for most of us today is the internet.

Part I presents a survey of all bills introduced in Congress and all public laws passed by both houses and signed by the President that contain the terms "internet," "electronic commerce," or one of a number of other terms that should capture references to the Net in the legislative branch.[3] The idea behind this methodology is to capture a *zeitgeist*, rather than to identify comprehensively all instances of Net regulation. Needless to say, this method excludes important instances of regulation, like federal agency decisions, executive actions, and state regulations. Nonetheless, the breadth of the sweep of congressional action and the nature of congressional politics suggest that surveying the bills as well as the laws passed should give us a good picture of the issues that have been seen during the 1990s, by at least some significant constituency, as appropriate for legislative action.

The survey suggests that Net regulation until now has involved three clusters of issues: (1) harnessing the Net to provide traditional public goods, like education and access to government information; (2) developing the future physical and intellectual infrastructure for the Net; and (3) establishing patterns of control over information flows in society, where entrenched patterns of control have been destabilized by the new technology. This is not to say that regulatory efforts have always cohered, or that a broad understanding of the importance of these three regulatory roles has always driven them. But these categories do begin to organize our thoughts about the issues of Net regulation and suggest a more-or-less coherent methodology for thinking about regulatory choices and placing them in context with other regulatory choices about Net regulation.

Part II describes the three clusters and explains how the first two clusters should properly be seen as being about Net regulation, no less than the third. Part III identifies the structure of regulation that falls within the third cluster. It consistently involves destabilization of patterns of control over information flows, the emergence of a range of regulatory options for response to this destabilization—each with differing outcomes for the distribution of control over information flows—and a regulatory choice that pushes towards a new, stable pattern of control. Part IV concludes by suggesting that a

3. *See infra* note 9 for a more detailed description of the search terms used.

consistent methodological approach to Net regulation should be taken in the future—an approach that identifies the relationship between the "problem" requiring regulation and the effects of the technology on information flows, and then designs an institutional response that can be justified given its expected effects on the flow of information in our society and polity.

I. TAKING STOCK OF NET REGULATION IN THE 1990S

A. Background and Methodology

The concept of regulating the Net—in the lawmaking or regulatory sense, rather than engineering sense—did not exist prior to the 1990s because "the Net" did not yet exist as a society-wide communications medium. Legislative acts in the early 1990s were responses to specific issues raised by computer-based, usually closed-system, electronic communications. Courts and commentators addressed issues of service provider liability for defamation with respect to proprietary commercial online services like CompuServe or Prodigy, or dial-up bulletin board services ("BBS").[4] They dealt with issues regarding internal employer local area networks ("LANs"), proprietary e-mail gateways, and wide area networks ("WANs"), primarily involving employer-employee relations regarding privacy.[5] They expressed concerns over electronic contracting—concerns raised by the increase in, but mostly hoped for, business-to-business electronic data interchange ("EDI").[6] The broader conceptual framework of "regulating the Net" was that, in the not-too-distant future, there would be an "Information Superhighway" whose development required a regulatory focus on traditional telecommunications and cable regulation, with the

4. *See* Cubby v. CompuServe, 776 F. Supp. 135 (S.D.N.Y. 1991); Stratton Oakmont, Inc. v. Prodigy Servs. Co., No. 31063/94, 1995 WL 323710, at *5 (N.Y. Sup. Ct. May 24, 1995); YOCHAI BENKLER, RULES OF THE ROAD FOR THE INFORMATION SUPERHIGHWAY: ELECTRONIC COMMUNICATIONS AND THE LAW 330–55 (1996) [hereinafter ELECTRONIC COMMUNICATIONS].

5. *See* ELECTRONIC COMMUNICATIONS, *supra* note 4, at 401–30.

6. *See generally* MICHAEL S. BAUM & HENRY H. PERRIT, JR., ELECTRONIC CONTRACTING, PUBLISHING, AND EDI LAW (1991); ELECTRONIC COMMUNICATIONS, *supra* note 4, at 43–147; BENJAMIN WRIGHT, THE LAW OF ELECTRONIC COMMERCE (1991).

intent of harnessing these mature industries to build the infrastructure for the Information Superhighway.[7]

The development of the World Wide Web ("Web"), and of Mosaic as a graphical user interface ("GUI") to it, coupled with America Online's ("AOL") phenomenal success as the first proprietary service to provide a gateway to the internet, changed all that. It turned out that the Net was not in the future; it was here. There may have been some resistance among "the natives" to the users who came from "aol.com," but that was quickly swept away by the sheer volume of participation in what suddenly became the new popular (not to say mass) medium.[8]

In order to impose some measure of discipline in the unavoidably normative exercise of evaluating Net regulation, I have taken a rather laborious and automatic approach to developing the initial text of my analysis. Rather than selecting a series of "important" or "representative" documents—judgments that inevitably already reflect my assumptions on the matter—this article offers a description of all bills and statutes introduced in or passed by Congress that include any one of a number of terms that indicate reference to what we might be interested in as "Net regulation." The following overview is the result of a Lexis search of all bills introduced in the United States Congress and all public laws passed by Congress and signed by the President, which use the terms "internet," "electronic commerce," "e-commerce," "world wide web," or "interactive" close to "computer" or "online."[9] There were 15 such bills and joint resolutions in the 101st Congress, 23 in the 102d Congress, 34 in the 103d Congress, 66 in the 104th Congress,

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7. *See* United States Dep't of Commerce, *The National Information Infrastructure: Agenda for Action* (Dec. 21, 1993) <http://metalab.unc.edu/nii>. Item 1 on the agenda was to promote private investment, and the first action mentioned was telecommunications regulatory reform to enlist telephone and cable to the effort. *See* United States Dep't of Commerce, *The National Information Infrastructure: Agenda for Action* (Dec. 21, 1993) <http://metalab.unc.edu/nii/NII-Agenda-for-Action.html>.

8. *See* United States Dep't of Commerce, *The Emerging Digital Economy II*, ch. 1 (June 1999) <http://www.ecommerce.gov/ede/chapter1.html>.

9. I used a Lexis search on all full text bills in the 101st–106th Congresses, with the following query: "internet" or "electronic commerce" or "e-commerce" or "world wide web" or (interactive /5 computer) or "online". I retrieved 15 bills and joint resolutions in the 101st Congress; 23 in the 102d Congress; 34 in the 103d Congress; 66 in the 104th Congress; 275 in the 105th Congress; and 348 in the first session of the 106th Congress by the end of 1999.

275 in the 105th Congress, and 348 introduced in the first session of the 106th Congress, for a total of 761. A total of sixty-two bills and resolutions including these words were enacted into public laws or congressional resolutions adopted by both houses:[10] three were enacted in the 101st Congress, four in the 102d, three in the 103d, five in the 104th, twenty-nine in the 105th, and eighteen in the first session of the 106th Congress.

This approach has obvious limitations that must be kept in mind when evaluating its results. It is crude, for it gives the Telecommunications Act of 1996 or the Children's Online Protection Act as much weight, as an initial matter, as a bill to require boxing associations to publish their ratings of boxers on the Net. It is partial, for it treats only the federal legislative branch, and not all producers of regulatory actions. And it relies on the use of specific language, and hence on self-conscious expression of the regulated matter as "the Net," which may have left out regulatory acts that had significant, intended effects on the Net, but did not refer to it in any way.

The advantage of the approach, however, is that it provides a relatively value-neutral picture of the instances in which the primary legislative arena in the United States self-consciously and expressly applied itself to the Net. It includes "irresponsible" acts—bills introduced without a hope of passing—as well as fully negotiated legislative regulations, and is therefore a better measure of the kinds of things thought by at least some significant portion of the American public to be important enough to justify regulation—even if they could not pass, as a matter of political reality. What I am hoping to get from this exercise is a representation of the 1990s Net regulation *zeitgeist*. The initial crudity of treating all instances as equal is then evened out by looking at trends and clusters in these legislative actions, rather than at individual instances, as expressions of the general cultural sense of what Net regulation is about, and what it might seek to achieve.

10. There were actually 63, but one, from the 100th Congress, was swept in by the (computer /5 interactive) phrase and referred in the same sentence to instructional computers and interactive videodiscs.

B. Bills: 1990–96

The term "internet" first appeared in bills introduced in the 102d Congress, in 1991. Three initiatives focused on education, libraries, infrastructure development through federal investment and coordination, and access to government information. H.R. 4014 was aimed at promoting the use of technology to enhance education and research, and spoke of the Net primarily as a means of disseminating educational materials and enhancing communications among researchers.[11] H.R. 5759 and S. 2937 (introduced by then-Senator Gore) sought to expand focus and funding for developing high-performance, high-speed computing, and proposed a federal effort to build a technological infrastructure focused on linking schools to each other over the internet, thereby enhancing education, libraries, medicine, and productivity.[12] H.R. 5983 and S. 2813 sought to use the internet to facilitate public access to federal electronic information through the Government Printing Office ("GPO").[13] Another initiative, H.R. 5392, proposed a program to promote electronic commerce as part of the National Institute of Standards and Technology ("NIST").[14] This bill, however, did not once mention the term "internet," for its frame of reference for electronic commerce was still business-to-business EDI.

The 103d Congress continued to see the internet as part of our national investment in educational quality and equality,[15] and in online libraries.[16] Congress reintroduced bills to focus federal efforts on building an information infrastructure,[17] with some mention of the Net in the major precursor bill to the Telecommunications Act of 1996,[18] and on increasing access to government information.[19] It addressed electronic commerce only in the context of government acquisitions.[20]

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11. *See* H.R. 4014, 102d Cong. (1991).
12. *See* H.R. 5759, 102d Cong. (1992); S. 2937, 102d Cong. (1992).
13. *See* H.R. 5983, 102d Cong. (1992); S. 2813, 102d Cong. (1992).
14. *See* H.R. 5392, 102d Cong. (1992).
15. *See* H.R. 2728, 103d Cong. (1993); S. 1040, 103d Cong. (1993); H.R. 1804, 103d Cong. (1993) (enacted); H.R. 856, 103d Cong. (1993).
16. *See* S. 626, 103d Cong. (1993).
17. *See* H.R. 1757, 103d Cong. (1993).
18. *See* H.R. 3636, 103d Cong. (1993).
19. *See* H.R. Res. 463, 103d Cong. (1994) (requiring that legislative tracking and text be made available online over the internet); H.R. 4606, 103d Cong. (1994)

Until 1995, then, the "internet" was associated with education, with libraries, and with access to government information; and the policy goals with which it was associated were the traditional policy goals for providing these public goods. In 1995–96, the 104th Congress began to look more familiar from the perspective of the late 1990s. There was much more legislative activity and a whole new slate of objectives. During this period, Congress attempted to regulate children's access to indecent materials,[21] internet gambling,[22] hate speech,[23] advertising practices,[24] consumer privacy,[25] and dissemination of information of concern to national security[26]—in particular, regulating encryption.[27] It began to regulate internet service providers ("ISPs"), by exempting them from liability on the condition that the ISPs would help enforce federal regulations.[28] Congress also continued to support the educational use of the Net,[29] most prominently by enacting the universal service subsidy in the

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(appropriating $1.5 million for a demonstration of making federal and other databases available over the internet) (enacted).

20. *See* S. 2207, 103d Cong. (1994); S. 2206, 103d Cong. (1994); H.R. 4263, 103d Cong. (1994); S. 1587, 103d Cong. (1993) (enacted).

21. *See* H.R. 3606, 104th Cong. (1996); H.R. 1978, 104th Cong. (1995) (finding its way, eventually, into the Telecommunications Act of 1996 as § 509); S. 314, 104th Cong. (1995). The notorious Exon bill, which is the lineal parent of the Communications Decency Act, did not use the term "internet," but is later swept in by this rather crude search as part of Senate Bill 652, the Senate version of the Telecommunications Act of 1996, into which the Exon bill was incorporated. *See* S. 652, 104th Cong. (1995) (enacted).

22. *See* H.R. 3526, 104th Cong. (1996); S. 1495, 104th Cong. (1995); S. 704, 104th Cong. (1995) (enacted); H.R. 497, 104th Cong. (1996) (enacted).

23. *See* H.R. 3781, 104th Cong. (1996).

24. *See* S. 2184, 104th Cong. (1996) (limiting the advertising of tobacco online); H.R. 4079, 104th Cong. (1996); H.R. 3515, 104th Cong. § 5 (1996) (applying automobile advertising rules to internet advertising).

25. *See* H.R. 4326, 104th Cong. (1996); H.R. 4299, 104th Cong. (1996) (regulating the disclosure of social security numbers obtained by interactive computer service); H.R. 4113, 104th Cong. (1996) (addressing the privacy of transactional information); H.R. 3685, 104th Cong. (1996).

26. *See* H.R. 3730, 104th Cong. (1996).

27. *See* S. 1726, 104th Cong. (1996) (resisting the administration's efforts to regulate encryption, in the name of aiding electronic commerce).

28. *See* Communications Decency Act, S. 652, 104th Cong. (1995) (enacted) (exempting ISPs from defamation liability as a publisher if the only control they exercise over the content is to provide filtering and blocking facilities).

29. *See* H.R. 4180, 104th Cong. (1996); H.R. 1617, 104th Cong. (1995). The increasing voluntarism focus is seen in House Resolution 521, 104th Cong. (1996), and Senate Resolution 274, 104th Cong. (1996), where the House and Senate laud private companies providing web access to schools.

Telecommunications Act of 1996,[30] and increasing use of the Net to provide access to government information.[31] Democratization and the internet community gained recognition in a joint resolution[32] and in a series of proposals to harness the Net to improve dissemination of federal elections information.[33]

C. Bills: 1997–99

There was a further explosion in internet regulation concerns in the 105th Congress. Four times as many bills that somehow referred to the Net were introduced, and six times as many such laws were passed. Bills were again introduced to deal with the issues of educational access. This concern was most clearly reflected in bills providing financial support for increasing internet access in schools[34] and the use of educational technology.[35] But there was also resistance to federal invest-

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30. Pub. L. 104-104, § 254, 110 Stat. 56, 71 (codified as amended at 47 U.S.C. § 254 (Supp. IV 1998)).

31. *See* H.R. 2127, 104th Cong. (1995); H.R. 1024, 104th Cong. (1995). A particularly odd instance of this is House Resolution 2491, 105th Cong. (1995), which, in the process of proposing to cancel the Technology Administration, requires that reports submitted to the National Technical Information Service be in a format conducive to their dissemination on the Net and the Web. *See also* S. 2179, 104th Cong. (1996) (disseminating information about hazardous environmental conditions via the internet); S. 2004, 104th Cong. (1996) (making health care information available on the internet); S. 1269, 104th Cong. (1995) (establishing internet access to traffic conditions).

32. *See* H.R. Con. Res. 185, 104th Cong. (1996); S. Con. Res. 65, 104th Cong. (1996).

33. *See* H.R. 3820, 104th Cong. (1996) (using the Net to enhance disclosure); H.R. Res 478, 104th Cong. (1996) (providing online public access to committee documents); H.R. 3760, 104th Cong. (1996) (using the Net to enhance disclosure); H.R. 3700, 104th Cong. (1996) (permitting interactive services to offer candidates free facilities); H.R. 3653, 104th Cong. (1996) (requiring information contained in reports to the Federal Election Commission to be available on the internet); H.R. Res. 454, 104th Cong. (1996) (making representatives' voting records available online).

34. *See* H.R. 2112, 105th Cong. § 2 (1997) (devoting fines for slamming to the school connection component of the universal service fund); H.R. 1153, 105th Cong. (1997) (providing tax incentives for the contribution of computers to schools); S. 1708, 105th Cong. (1997) (stating the level of universal service support to schools' and libraries' internet connections, and increasing funding for educational technology); S. 12, 105th Cong. § 402 (1997) (expressing the sense of the Senate that money should be allotted for technology in the classroom); H.R. 6, 105th Cong. § 301 (1997) (enacted).

35. *See* H.R. 4552, 105th Cong. (1998) (establishing grants for local educational authorities to provide teacher training); H.R. 2065, 105th Cong. (1997) (providing for training of teachers); S. 839, 105th Cong. (1997) (same).

ments in school internet access[36] and to what would become a growing concern in other areas—the content of communications on the Net. This concern led to the first attempts to control what information minors can access over the Net, by requiring installation of filters in school and library computers as a condition of receiving universal service support.[37]

During the 105th Congress, efforts to enhance access to government information using the internet continued, and gradually transformed into a more general assumption that government information should be made available on the Net.[38]

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36. *See* S. 2348, 105th Cong. (1998) (repealing the FCC's authority to levy universal service charges to support internet access for schools, and moving the subsidies to state authorities); H.R. 4324, 105th Cong. (1998) (repealing the FCC's authority to levy universal service charges to support internet access for schools); H.R. 4065, 105th Cong. (1998) (same effect as H.R. 4324); H.R. 4032, 105th Cong. (1998) (same effect as H.R. 4324).

37. *See* H.R. 4274, 105th Cong. §§ 601–02 (1998) (requiring filters to be installed by all schools and libraries receiving federal funds); S. 1708, 105th Cong. (1998) (requiring recipients of funding to have policies restricting access to inappropriate materials); H.R. 3177, 105th Cong. (1998) (requiring all schools to install filtering or blocking mechanisms that prevent access to "matter deemed to be inappropriate for minors" as a precondition to receiving universal service funds); S. 1619, 105th Cong. (1998) (conditioning universal service funds on installing filters in schools and libraries).

38. *See* S. 2645, 105th Cong. (1998) (designating Library of Congress as the United States station on Global Legal Information Network for global sharing of legal information); S. 2636, 105th Cong. (1998) (regarding emission rates from power generation plants); H.R. 4621, 105th Cong. (1998) (regarding after-school programs); S. 2484, 105th Cong. (1998) (addressing the best practices to avoid gun violence in schools); S. 2432, 105th Cong. (1998) (enacted) (regarding information about assistive technology devices for individuals with disabilities); H.R. 4461, 105th Cong. (1998) (same); S. 2416, 105th Cong. (1998) (regarding health plan information); S. 2407, 105th Cong. (1998) (regarding entrepreneurial opportunities available to veterans); S. 2339, 105th Cong. (1998) (regarding pension plans available for small businesses); H.R. 4275, 105th Cong. (1998) (regarding economic development); H.R. 4110, 105th Cong. (1998) (enacted) (regarding gulf war syndrome); H.R. 4073, 105th Cong. (1998) (regarding the best practices to avoid child-related gun violence); S. 2185, 105th Cong. (1998) (same); H.R. 3980, 105th Cong. (1998) (regarding gulf war syndrome research findings); S. 2124, 105th Cong. (1998) (addressing maritime information); H.R. 3899, 105th Cong. (1998) (regarding HUD listings); H.R. Res. 424, 105th Cong. (1998) (regarding information about travel of members and employees of the House); H.R. 3661, 105th Cong. (1998) (regarding gulf war syndrome information); S. 1901, 105th Cong. (1998) (providing for online access to IRS materials); H.R. 3560, 105th Cong. (1998) (regarding social security benefits); H.R. 3514, 105th Cong. (1998) (addressing reports on violence against women); H.R. 3474, 105th Cong. (1998) (regarding health effects of tobacco); H.R. 3435, 105th Cong. (1998) (addressing affordable housing strategies); S. 1712, 105th Cong. (1998) (regarding ERISA and retirement savings information); H.R. 3310, 105th Cong. (1998) (addressing small business paperwork reduction information); H.R. 3150, 105th Cong. (1998) (re-

Moreover, the concept of using Net publication to enhance access to governance-related materials expanded to include information required by law to be published by non-government actors,[39] and for the first time was explicitly drafted to disseminate federal propaganda.[40] There were more explicit attempts to use the Net not only to enhance access to information generated by the government, but also directly to improve gov-

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garding bankruptcy-related reports); H.R. 3134, 105th Cong. (1998) (providing for online warnings of telemarketing fraud aimed at seniors); H.R. 3131, 105th Cong. (1998) (regarding all congressional research service materials); S. 1578, 105th Cong. (1998) (same); S. 1577, 105th Cong. (1998) (regarding child care safety reports); H.R. 2876, 105th Cong. (1997) (addressing information about food animal drug use and residues); H.R. 2691, 105th Cong. (1997) (regarding risk analyses of safety devices in motor vehicles); H.R. 2688, 105th Cong. (1997) (regarding information about economic development programs); H.R. 2451, 105th Cong. (1997) (regarding environmental hazards); S. 1153, 105th Cong. (1997) (regarding drug residues in food animal products); S. 1150, 105th Cong. (1997) (enacted) (same); H.R. 2095, 105th Cong. (1997) (regarding human rights abuses in China); H.R. 2015, 105th Cong. (1997) (regarding Medicare information); S. 947, 105th Cong. (1997) (regarding Medicare choice options); H.R. 1987, 105th Cong. (1997) (regarding information about college athletics programs); S. 933, 105th Cong. (1997) (addressing college athletics); S. 771, 105th Cong. (1997) (regarding spam enforcement); S. 757, 105th Cong. (1997) (regarding ERISA and retirement savings information); S. 712, 105th Cong. (1997) (addressing report on declassification of government materials); H.R. 1440, 105th Cong. (1997) (regarding Department of Education grants and scholarships); H.R. 1377, 105th Cong. (1997) (regarding ERISA and other retirement savings information); S. 599, 105th Cong. (1997) (regarding environmentally hazardous conditions); S. 527, 105th Cong. (1997) (regarding ingredients of tobacco products); S. 417, 105th Cong. (1997) (enacted) (addressing compliance with alternative fuel vehicle purchases); H.R. 443, 105th Cong. (1997) (regarding disclosure of Medicare information); H.R. 337, 105th Cong. (1997) (same); H.R. Res. 5, 105th Cong. (1997) (addressing House committee reports). *But see* S. 1867, 105th Cong. (1998) (imposing small business paperwork requirements); S. 1858, 105th Cong. (1998) (regarding work incentives for individuals with disabilities); S. 1792, 105th Cong. (1998) (addressing retirement savings); H.R. 2602, 105th Cong. (1997) (prohibiting advertising of military surplus sales on the internet).

39. *See* H.R. 4742, 105th Cong. (1998) (requiring publication of current airline fares); H.R. 4274, 105th Cong. (1998) (publishing reports required under the Labor-Management Reporting and Disclosure Act of 1959); H.R. 4250, 105th Cong. (1998) (addressing health plan information); S. 2238, 105th Cong. (1998) (requiring publication of boxing associations' ratings of boxers); S. 1889, 105th Cong. (1998) (requiring documents to be produced by tobacco companies); H.R. 2264, 105th Cong. (1997) (publishing reports required under the Labor-Management Reporting and Disclosure Act of 1959).

40. *See* S. 1868, 105th Cong. (1998) (establishing religious freedom web site); H.R. 2431, 105th Cong. § 103 (1997) (establishing web site to promote religious freedom worldwide) (enacted); H.R. 2232, 105th Cong. § 5 (1997) (broadcasting, with Voice of America, information about fugitives from American justice); H.R. 2095, 105th Cong. (1997) (publishing information about human rights abuses in China).

ernment services by using electronic information management and online access.[41] There were also expanded efforts to harness the Net to aid democracy—by disseminating federal elections-related information,[42] by facilitating participation in public debate,[43] and by noting the Net's importance in facilitating cultural preservation.[44]

The 105th Congress was also the first Congress to debate, through proposed bills, the future role of government in the development of the internet. There were dueling bills regarding investment in the "Next Generation Internet": on one side, the bills—eventually passed as law[45]—that funded research and development through the National Science Foundation ("NSF") and other government agencies;[46] on the other side, bills that resisted the extent and nature of government participation in

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41. *See* S. 2571, 105th Cong. (1998) (setting up tests to improve government benefits management).

42. *See* H.R. 3721, 105th Cong. (1998); H.R. 3582, 105th Cong. (1998); H.R. 3581, 105th Cong. (1998); H.R. 3526, 105th Cong. (1998); H.R. 3485, 105th Cong. (1998); H.R. 3476, 105th Cong. (1998); H.R. 3399, 105th Cong. (1998); H.R. 3315, 105th Cong. (1998); H.R. 3174, 105th Cong. (1998); S. 1561, 105th Cong. (1997); H.R. 3019, 105th Cong. (1997); H.R. 2777, 105th Cong. (1997); H.R. 2573, 105th Cong. § 7 (1997) (providing access to candidate reports); S. 1190, 105th Cong. (1997); H.R. 2433, 105th Cong. (1997) (same); H.R. 2183, 105th Cong. (1997) (requiring publication of use for campaigns with mild modifications that affect the vice president, like internet publication of uses of Air Force 1 and 2 and sweeping internet publication of soft-money uses regulated or exempted from regulation); H.R. 2147, 105th Cong. (1997); H.R. 2109, 105th Cong. (1997); S. 976, 105th Cong. (1997); H.R. 2074, 105th Cong. (1997); H.R. 1780, 105th Cong. (1997) (providing information about campaigns); H.R. 965, 105th Cong. (1997) (same); H.R. 653, 105th Cong. (1997) (regarding use for campaigning); S. 25, 105th Cong. (1997).

43. *See* S. 1882, 105th Cong. § 303 (1998) (permitting Commission on Education of the Deaf to conduct hearings on the Net, to enhance participation and feedback); H.R. 3546, 105th Cong. (1998) (seeking to use internet forums nationwide to discuss social security).

44. *See* H.R. 4112, 105th Cong. § 312 (1998) (enacted); S. 1971, 105th Cong. (1998) (permanently authorizing the American Folklife Center in the Library of Congress, noting that it shares its unique collections in digital form over the Net).

45. *See* Next Generation Internet Research Act of 1998, Pub. L. No. 105-305, 1998 U.S.C.C.A.N. (112 Stat.) 2919.

46. *See* H.R. 3332, 105th Cong. (1998) (enacted). After the bill passed both houses, Senator Leahy commented that including the domain name study was putting the horse (trademarks) before the cart (efficient competition in gTLDs); *see also* H.R. 3616, 105th Cong. (1998) (enacted) (providing funding for Next Generation Internet in defense budget); S. 1609, 105th Cong. (1998) (Senate version of H.R. 3332); S. 1046, 105th Cong. (1998) (providing funding for Next Generation Internet in NSF budget).

developing the internet,[47] such that even the NSF and NIST would have been prohibited from spending money on the "Next Generation Internet."[48] The resolution of this debate favored continued government investment,[49] except that the drive to take the domain name system administration out of the NSF did prevail.[50]

The concern over Net infrastructure development also carried over into more traditional areas of infrastructure regulation. There were bills that supported the private provision of infrastructure development—through expanding satellite services to include internet service,[51] or permitting low power television ("LPTV") licensees to provide wireless internet access.[52] There were efforts to shield internet access from time-sensitive pricing by regulating its treatment by telecommunications carriers, particularly the local exchange carriers.[53] Future planning was expressed by an effort to add questions about internet connectivity to the Census 2000 questionnaire.[54]

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47. *See* H.R. 1271, 105th Cong. § 6 (1997) (prohibiting use of funds to support research on Next Generation Internet).

48. *See* H.R. 1273, 105th Cong. § 207 (1997) (affecting the NSF); *see also* H.R. 1275, 105th Cong. § 307 (1997) (affecting NASA); H.R. 1274, 105th Cong. § 8 (1997) (affecting NIST). *But see* S. 1325, 105th Cong. (1997) (excluding Technology Administration in Commerce from Next Generation Internet); S. 1250, 105th Cong. (1997) (permitting NASA, expressly, to participate in Next Generation Internet); H.R. 1277, 105th Cong. § 7 (1997) (affecting the Department of Energy).

49. *See* National Defense Authorization Act, Pub. L. No. 105-261, 1998 U.S.C.C.A.N. (112 Stat.) 1920 (appropriating funds for Next Generation Internet development); National Science Foundation Act of 1998, Pub. L. No. 105-207, 1998 U.S.C.C.A.N. (112 Stat.) 869 (approving $48 million appropriation to NSF for Next Generation Internet for fiscal years 1998 and 1999); 1998 Supplemental Appropriations and Rescissions Act, Pub. L. No. 105-174, 1998 U.S.C.C.A.N. (112 Stat.) 58 (legalizing and ratifying fees collected as part of domain registration fee, and transferring them to NSF to be used for internet intellectual infrastructure, including Next Generation Internet).

50. *See* Act of Oct. 20, 1999, Pub. L. No 106-74, 1999 U.S.C.C.A.N. (113 Stat.) 1047; Veterans Affairs and HUD Appropriations Act, Pub. L. No. 105-276, 1998 U.S.C.C.A.N. (112 Stat.) 2461 (prohibiting NSF from expending funds on entering into contractual relations regarding management of the domain name and numbering system after Sept. 30, 1998); H.R. 4194, 105th Cong. (1998) (enacted) (restricting NSF's use of funds).

51. *See* S. 1328, 105th Cong. (1997); H.R. 1872, 105th Cong. (1997).

52. *See* H.R. 4802, 105th Cong. (1998).

53. *See* H.R. 4801, 105th Cong. § 6 (1998) (treating the telecommunications industry's internet traffic carried by local exchange carriers ("LECs") as interstate for purposes of reciprocal compensation); S. 86, 105th Cong. (1997) (proposing that LECs and the internet community talk about access charges rather than levy them).

54. *See* H.R. 4270, 105th Cong. (1998).

While the universal service reform passed by the 104th Congress in the Telecommunications Act of 1996 was the primary and central change in policy concerning distributive justice, there were more efforts in the 105th Congress to deal with distribution concerns.[55] Most interesting in this respect was a bill to permit consumers to aggregate to provide a public internet service, as does a public electric utility.[56]

During this period there was also a continued heavy focus on regulating "bad" or "dangerous" speech, and in particular, bills demonstrated a perception that children are particularly exposed and endangered by the Net environment. Sex, in this matter, is king. Bills were introduced to protect children from access to pornography,[57] as well as from exploitation for child pornography.[58] Congress sought to prevent children's access to pornography by new prohibitions on the distribution of smut on the Web[59] and by requiring ISPs to offer filtering software.[60] Moreover, heavy attention was paid to protecting children from sexual assault[61]—which for some reason was linked with computers in the minds of legislators—and therefore led to enhanced penalties for child sexual abuse if a computer was used in perpetrating it.[62] There were prohibitions on making available information that could facilitate illegal sexual relations

55. *See* S. 386, 105th Cong. tit. VII (1997) (addressing rural health care providers and telemedicine).

56. *See* H.R. 4798, 105th Cong. § 206 (1998). As part of a general restructuring of the electric power industry, House Bill 4798 permitted consumers to combine to form nonprofit municipal electricity services or other nonprofit provision mechanisms to provide services like those of electricity companies. *See id.* It also provided telecommunications services, including internet service, to those consumer aggregations if permitted to electricity providers.

57. *See* S. 2648, 105th Cong. (1998) (permitting schools to use federal funds to purchase screening software); S. 2491, 105th Cong. § 901 (1998) (seeking study of the problem and how to limit it).

58. *See* H.R. 3985, 105th Cong. (1998).

59. *See* H.R. 3783, 105th Cong. (1998) (COPA); S. 1482, 105th Cong. (1997).

60. *See* H.R. 3494, 105th Cong. tit. IV (1998) (providing for an enhanced penalty for transmitting obscene materials to minors); H.R. 1180, 105th Cong. (1997); H.R. 774, 105th Cong. (1997).

61. *See* H.R. 3494, 105th Cong. (1998) (addressing sexual abuse of minors); H.R. 2815, 105th Cong. (1997) (prohibiting use of internet to target children for sexual propositions or materials); H.R. 2791, 105th Cong. (1997) (prohibiting service providers from offering internet accounts to "sexually violent predators").

62. *See* H.R. 3494, 105th Cong. § 503 (1998) (providing sentencing guideline enhancement for use of a computer in sexual abuse of a minor).

with minors,[63] efforts to prohibit ISPs from offering internet access to convicted "sexual predators,"[64] and efforts to persuade states to prevent state prisoners from having unsupervised internet access.[65] "Dangerous communications" were also addressed through the regulation of tobacco advertising and sales to children,[66] a proposed ban on internet or mail-order gun sales without a federal license,[67] and the return of internet gambling regulation.[68]

On a parallel track was the introduction of consumer protection bills. Some simply applied existing labeling requirements to online advertising,[69] evidencing a concern over internet fraud[70] and expressing concern over the quality of information available on the Net.[71] But more specifically, bills showed continued concern over online consumer privacy.[72] Children's consumer privacy took center stage,[73] while resis-

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63. *See* H.R. 4276, 105th Cong. § 130 (1998) (prohibiting making personally identifiable information about a minor under 17 available for purposes of soliciting sex that is illegal under any law); S. 1965, 105th Cong. (1998) (same).

64. *See* S. 1356, 105th Cong. (1997).

65. *See* H.R. 3729, 105th Cong. (1998).

66. *See* H.R. 3474, 105th Cong. (1998) (prohibiting advertising of tobacco); S. 1755, 105th Cong. (1998) (prohibiting advertising accessible from the United States); S. 1648, 105th Cong. (1998) (same); S. 1638, 105th Cong. (1998) (prohibiting advertising available in the United States and publicizing health risks on the Net); S. 1530, 105th Cong. (1997) (prohibiting advertising); S. 1415, 105th Cong. (1997) (prohibiting internet advertising unless inaccessible to minors); S. 1414, 105th Cong. (1997) (prohibiting internet advertising accessible from the United States); H.R. 2034, 105th Cong. (1997) (prohibiting sale of tobacco to children over the Net); H.R. 2017, 105th Cong. (1997) (same); H.R. 1964, 105th Cong. (1997) (addressing tobacco, alcohol, and children); H.R. 1244, 105th Cong. (1997).

67. *See* H.R. 4114, 105th Cong. (1998).

68. *See* H.R. 4350, 105th Cong. (1998); H.R. 2380, 105th Cong. (1997); S. 474, 105th Cong. (1997).

69. *See* H.R. 4788, 105th Cong. (1998) (specifying that usual consumer protection regulations apply to internet advertising as well); H.R. Con. Res. 318, 105th Cong. (1998) (calling upon FTC to investigate internet advertisers that falsely state their geographic location).

70. *See* S. 2587, 105th Cong. (1998) (focusing in particular on seniors).

71. *See* S. 2208, 105th Cong. (1998) (requiring evaluation of quality of health-related information available on the Net).

72. *See* H.R. 2368, 105th Cong. (1997) (seeking voluntary self-regulation); H.R. 1964, 105th Cong. (1997) (focusing on children); H.R. 1287, 105th Cong. (1997) (regulating disclosure of social security numbers or related personal information to third parties); H.R. 98, 105th Cong. (1997).

73. *See* H.R. 4667, 105th Cong. (1998) (requiring strict regulations regarding the collection of personal information from children and disclosure of policies and information to parents); S. 2326, 105th Cong. (1998) (requiring the FTC to promulgate rules for protection of privacy of children as consumers on the Net).

tance to privacy regulation took the form of a preference for self-regulation or of a focus on the privacy of users of government services.[74] The problem of spam—unsolicited junk e-mail—also received a good bit of legislative attention.[75] Bridging the area of privacy concern and e-commerce was the continued focus on encryption regulation. Here, Congress played the role of counterweight to the Administration's efforts to stall the dissemination of strong encryption—to some extent relying on a privacy rationale, but also relying on a rationale of the importance of encryption to electronic commerce.[76]

The 105th Congress focused heavily on electronic commerce, and on the Net as an environment crucial to United States economic development—to be fostered as a matter of industrial policy and facilitated by specifically-tailored property and contract rules. To that end, there were general declarations that supported electronic commerce[77] and bills that sought to support electronic commerce by appointing an electronic commerce advisory committee representing its business side and occasionally seeking the representation of consumer

74. *See* H.R. 4632, 105th Cong. (1998) (requiring federal agencies to comply with the same consumer privacy practices as private businesses); H.R. 4470, 105th Cong. (1998) (prohibiting government agencies from disclosing or selling personal data); H.R. 1367, 105th Cong. (1997); H.R. 1331, 105th Cong. (1997) (embodying a moderate "study" version); H.R. 1330, 105th Cong. (1997).

75. *See* H.R. 4176, 105th Cong. (1998) (focusing on information about the sender and enforcement of service provider rules); H.R. 4124, 105th Cong. (1998) (focusing on assuring that spam is transparent as to source and enforcement of service provider rules); H.R. 3888, 105th Cong. § 201 (1998) (refraining explicitly from regulating spam); S. 1618, 105th Cong. (1998) (requiring disclosure of sender's identification and routing information and requiring "remove" option); H.R. 2368, 105th Cong. (1997) (seeking voluntary self-regulation); S. 875, 105th Cong. (1997) (prohibiting false source information, repeated messages to consumers who notify of objection, and messages in contravention of service provider policy); S. 771, 105th Cong. (1998) (requiring a label, "advertising," at top of e-mail and requiring that routing information be valid).

76. *See* S. 2067, 105th Cong. (1998) (establishing general freedom to use any encryption and prohibiting a mandatory key recovery system); S. 377, 105th Cong. (1997) (seeking to aid electronic commerce through strong encryption availability); S. 376, 105th Cong. (1997) (permitting use of encryption and prohibiting mandatory key escrow); H.R. 695, 105th Cong. (1997).

77. *See* H.R. 2991, 105th Cong. (1997) (enhancing digital signature use and electronic commerce by requiring federal agencies to adopt procedures for accepting digital signatures); H.R. 2292, 105th Cong. § 201 (1997) (forming electronic commerce advisory group, comprised of industry members, on the proper structural changes required to expand electronic filings of tax returns).

groups.[78] Bills proposed tax incentives for the software and online services industries.[79] More generally, there emerged the internet tax freedom notion of assuring that online access services were not subject to tax, and that electronic commerce not be subject to specific taxation.[80] The notion of internet tax freedom was put forward as international trade policy,[81] and there were suggestions to expand it to a more general notion of forbearance from regulation at both the federal and state levels.[82] Federal procurement was also enlisted to support the growth of electronic commerce.[83]

In addition to the various subsidies designed specifically to aid electronic commerce, as opposed to infrastructure, bills were introduced to make the legal environment more conducive to electronic commerce. A digital signature law was introduced,[84] and intellectual property rights were expanded to increase the appropriability of information goods and services provided online. The Digital Millennium Copyright Act ("DMCA") was introduced,[85] and the development of domain

78. *See* H.R. 4105, 105th Cong. (1998) (achieving parity by having half-but-one of the board appointed by the congressional minority leaders, but making no provision for consumers or non-commercial information providers); H.R. 3529, 105th Cong. (1998) (same); S. 1096, 105th Cong. (1997); S. 442, 105th Cong. § 102 (1998) (including representation of consumer groups).

79. *See* H.R. 143, 105th Cong. (1997) (providing equality to software exporters).

80. *See* H.R. 4105, 105th Cong. (1998) (imposing a moratorium on internet-specific taxing); H.R. 3849, 105th Cong. (1998) (same); S. 1888, 105th Cong. (1998) (same); H.R. 3529, 105th Cong. (1998) (requiring tax parity for internet and other commerce); S. 442, 105th Cong. (1998) (imposing a moratorium on internet-specific taxing); H.R. 1054, 105th Cong. (1997) (preempting state taxes); H.R. 995, 105th Cong. (1997) (exempting internet access and other online services from tax).

81. *See* H.R. 3849, 105th Cong. (1998) (declaring trade policy position that internet should be free of tariffs and similar barriers).

82. *See* H.R. 3849, 105th Cong. § 231 (1998) (excluding internet service providers from FCC's jurisdiction); H.R. 2372, 105th Cong. (1997) (seeking to embrace minimal regulation by both federal and state authorities).

83. *See* S. 936, 105th Cong. § 844 (1997).

84. *See* S. 2107, 105th Cong. (1998) (providing for the recognition by federal agencies of electronic authentication and for a study of authentication in electronic commerce); H.R. 3472, 105th Cong. (1998) (providing for electronic authentication in banking); S. 1594, 105th Cong. (1998) (same); H.R. 2991, 105th Cong. (1997) (enhancing digital signature use and electronic commerce by requiring federal agencies to adopt procedures for accepting digital signatures); H.R. 2937, 105th Cong. (1997).

85. *See* Digital Millennium Copyright Act, Pub. L. 105-298, 1998 U.S.C.C.A.N. (112 Stat.) 2827; Digital Millennium Copyright Act, H.R. 2281,

name policy was linked to trademark concerns.[86] There was an effort to delineate clearly the liability or responsibility of ISPs,[87] which were treated using the same structure developed for content regulation: they were insulated from liability, but given an enforcement role in exchange.[88] Finally, there were more specific responses to problems like Y2K readiness[89] and liability.[90] No less interesting, though of much lesser prominence, was the first attempt to use the Net to facilitate real-world efficient markets where market failure was in the past seen as legion—specifically, a requirement that airlines publish their fares online.[91]

The 106th Congress has followed more or less the same pattern. There has been increasing use of Net publication as a standard approach to disseminating government information,[92]

105th Cong. (1998); Digital Millennium Copyright Act, S. 2037, 105th Cong. (1998).

86. *See* S. 1727, 105th Cong. (1998); S. 1609, 105th Cong. § 7 (1998).

87. *See* S. 1146, 105th Cong. (1997) (providing exemptions for activities such as carriage, linking, and searching, and imposing a requirement of cooperation in the removal of stored infringing materials).

88. *See* H.R. 2281, 105th Cong. §§ 201–03 (1998) (exempting ISPs from liability for copyright infringement subject to their availability to block access to information claimed by its owners to be infringing); S. 771, 105th Cong. (1997) (eliminating liability for spam, but requiring termination of use if notified of spammer in violation of law).

89. *See* S. 2392, 105th Cong. (1998); H.R. 4455, 105th Cong. (1998); H.R. 4427, 105th Cong. (1998); H.R. 4355, 105th Cong. (1998); H.R. 3412, 105th Cong. (1998).

90. *See* H.R. 4240, 105th Cong. (1998) (limiting recovery to contract damages).

91. *See* H.R. 4742, 105th Cong. § 5 (1998) (requiring airlines to publish current fares).

92. *See* S. 1955, 106th Cong. (1999); H.R. 3411, 106th Cong. (1999); H.R. 3226, 106th Cong. (1999); H.R. 3210, 106th Cong. (1999); H.R. 3206, 106th Cong. (1999); H.R. 3196, 106th Cong. (1999); S. 1835, 106th Cong. (1999) (publishing and maintaining information concerning the participation of each state in the federal intellectual property system); S. 1776, 106th Cong. (1999); S. 1772, 106th Cong. (1999); S. 1741, 106th Cong. (1999); H.R. 3073, 106th Cong. (1999); S. 1712, 106th Cong. (1999) (creating a requirement to make information available on the Net whenever publication in Federal Register is required under the Act); H.R. 3010, 106th Cong. (1999); S. 1672, 106th Cong. (1999); S. 1639, 106th Cong. (1999); S. 1626, 106th Cong. (1999); S. 1618, 106th Cong. (1999); S. 1594, 106th Cong. (1999); H.R. 2832, 106th Cong. (1999); H.R. 2645, 106th Cong. (1999); H.R. 2606, 106th Cong. (1999); S. 1422, 106th Cong. (1999); S. 1378, 106th Cong. (1999); S. 1333, 106th Cong. (1999); H.R. 2399, 106th Cong. (1999); S. 1270, 106th Cong. (1999); H.R. 2303, 106th Cong. (1999); H.R. 2300, 106th Cong. (1999); S. 1266, 106th Cong. (1999); S. 1234, 106th Cong. (1999); H.R. 2245, 106th Cong. (1999); H.R. 2188, 106th Cong. (1999); S. 1214, 106th Cong. (1999); S. 1204, 106th

to providing government services,[93] and to permitting the public to communicate with the government.[94] It has been used

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Cong. (1999); H.R. 2095, 106th Cong. (1999); H.R. 2046, 106th Cong. (1999); H.R. 2034, 106th Cong. (1999); H.R. 2030, 106th Cong. (1999); H.R. 1995, 106th Cong. (1999) (including internet dissemination as part of definition of "publicly report"); H.R. 1926, 106th Cong. (1999); S. 1112, 106th Cong. (1999); S. 1111, 106th Cong. (1999); H.R. 1906, 106th Cong. (1999); S. 1072, 106th Cong. (1999) (providing information about the centennial anniversary of flight); S. 1066, 106th Cong. (1999) (providing access to information about soil carbon potential); H.R. 1776, 106th Cong. (1999); S. 996, 106th Cong. (1999); H.R. 1734, 106th Cong. (1999); H.R. 1658, 106th Cong. (1999); H.R. 1655, 106th Cong. (1999); H.R. 1654, 106th Cong. (1999); S. 942, 106th Cong. (1999) (providing for use of internet-based capability to allow taxpayers to generate tax receipts); S. 941, 106th Cong. (1999); S. 910, 106th Cong. (1999) (using the internet to coordinate information about pests); H.R. 1568, 106th Cong. (1999); H.R. 1553, 106th Cong. (1999); H.R. 1551, 106th Cong. (1999); H.R. 1550, 106th Cong. (1999); S. 804, 106th Cong. (1999); S. 790, 106th Cong. (1999) (providing that a report on bottled water be posted on the internet); H.R. 1356, 106th Cong. (1999); H.R. 1342, 106th Cong. (1999); H.R. 1307, 106th Cong. (1999); S. 741, 106th Cong. (1999); S. 736, 106th Cong. (1999); S. 735, 106th Cong. (1999) (publicizing the competitive grant program for children's gun violence prevention education); H.R. 1153, 106th Cong. (1999); S. 633, 106th Cong. (1999); S. 625, 106th Cong. (1999); S. 599, 106th Cong. (1999); H.R. 1000, 106th Cong. (1999); H.R. 975, 106th Cong. (1999); S. 484, 106th Cong. (1999); S. 468, 106th Cong. (1999); H.R. 2, 106th Cong. (1999); H.R. 654, 106th Cong. (1999) (making certain information available through the Congressional Research Service website); S. 393, 106th Cong. (1999) (providing access to Congressional Research Service, lobbying disclosure reports, and gift reports); H.R. 606, 106th Cong. (1999); S. 374, 106th Cong. (1999); S. 353, 106th Cong. (1999) (allowing for copies of primary materials in class action suits to be posted on the internet); H.R. 543, 106th Cong. (1999); S. 331, 106th Cong. (1999); S. 261, 106th Cong. (1999); H.R. 417, 106th Cong. (1999); H.R. 412, 106th Cong. (1999); H.R. 409, 106th Cong. (1999); H.R. 391, 106th Cong. (1999); S. 205, 106th Cong. (1999) (providing for a study of using the internet to disseminate statistical data compiled by government); S. 59, 106th Cong. (1999); S. 22, 106th Cong. (1999); S. 21, 106th Cong. (1999); S. 9, 106th Cong. (1999); H.R. 209, 106th Cong. (1999); H.R. 202, 106th Cong. (1999); H.R. 199, 106th Cong. (1999); H.R. 10, 106th Cong. (1999).

93. *See* H.R. 3331, 106th Cong. (1999) (allowing recreational fishing permits to be sold over the internet); S. 1911, 106th Cong. (1999) (providing for sale of fishing permits over the internet); S. 1809, 106th Cong. (1999) (providing for use of the internet to improve support services for individuals with developmental disabilities); S. 1800, 106th Cong. (1999) (providing for a study of the feasibility of using the internet to administer the food stamp program); S. 1666, 106th Cong. (1999) (providing for certification of farmers' risk management reports); H.R. 2738, 106th Cong. (1999) (studying use of online access to facilitate participation in food stamp program); S. 1372, 106th Cong. (1999) (seeking creation of automated internet-based system for filing shippers' export declarations); H.R. 2490, 106th Cong. (1999) (regarding internet-based capability for taxpayer to generate tax receipt); S. 942, 106th Cong. (1999) (using internet-based capability to allow taxpayers to generate tax receipts).

similarly as a means for private parties to publish information they are required to make public,[95] or to support private parties who are making useful information available on the Web.[96] Congress has continued to attempt to harness the Net to enhance the election process, not only by facilitating dissemination of Federal Elections Commission reports,[97] but also by permitting candidates to use public funds for internet- and Web-based campaign materials[98] by excluding the use of internet communications by individuals from covered expenditures,[99] and most creatively, authorizing a study of the use of internet technology to enhance voter participation.[100] There also has been increased use of the Net for government propaganda and educational messages.[101]

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94. *See* H.R. 2607, 106th Cong. (1999) (requiring a comprehensive report on commercial space transportation to include public comments collected on relevant government web sites).

95. *See* H.R. 3037, 106th Cong. (1999) (providing for Net publication of labor management reporting and disclosure documents); S. 1650, 106th Cong. (1999) (providing for electronic submissions of labor-management reports); H.R. 2926, 106th Cong. (1999) (providing for internet access to health plan information); H.R. 2569, 106th Cong. (1999) (providing for disclosures on the internet by electric utility companies); H.R. 1832, 106th Cong. (1999) (providing for placement of boxing ratings on the internet); H.R. 1687, 106th Cong. (1999) (providing internet access to health plan information); S. 900, 106th Cong. (providing for a study and report of advertising practices of online brokerage services); S. 753, 106th Cong. (1999) (providing for an online consumer complaint bureau for insurance); H.R. 1073, 106th Cong. (1999) (providing for electronic access to reports by municipal governments awarded federal grants for housing assistance); H.R. 448, 106th Cong. (1999); S. 305, 106th Cong. (1999) (providing for publication on the internet of boxing ratings).

96. *See* H.R. 905, 106th Cong. (1999); S. 254, 106th Cong. (1999) (funding National Center for Missing and Exploited Children, citing value of their web site); S. 249, 106th Cong. (1999).

97. *See* H.R. 3243, 106th Cong. (1999); S. 1816, 106th Cong. (1999); S. 1671, 106th Cong. (1999); H.R. 2668, 106th Cong. (1999); H.R. 2490, 106th Cong. (1999); H.R. 1922, 106th Cong. (1999); S. 1107, 106th Cong. (1999); H.R. 1818, 106th Cong. (1999); H.R. 1739, 106th Cong. (1999); S. 982, 106th Cong. (1999); H.R. 417, 106th Cong. (1999); S. 26, 106th Cong. (1999); H.R. 32, 106th Cong. (1999).

98. *See* H.R. 331, 106th Cong. (1999).

99. *See* S. 1747, 106th Cong. (1999).

100. *See* Digital Democracy Study Act of 1999, H.R. 3232, 106th Cong. (authorizing a study of issues relating to the incorporation of online and internet technologies in the voting process and for other purposes).

101. *See* H.R. 2987, 106th Cong. (1999) (providing for placement of anti-drug messages on federal department and agency web sites generally); S. 1428, 106th Cong. (1999) (providing for placement of anti-drug messages on federal web sites); S. 1364, 106th Cong. (1999) (using Net to collect and make available information about successful campaigns to promote responsible fatherhood); S. 1337, 106th Cong. (1999) (providing for a posting of anti-drug message on NASA site); H.R.

Congress has continued to concern itself with infrastructure development,[102] including Next Generation Internet development.[103] There has been some sense that information technology is generally the appropriate domain of policy analysis,[104] some attempts to restructure the universal service system—primarily by localizing it[105]—and new efforts to support the development of telehealth services.[106] Traditional infrastructure regulation after the Telecommunications Act of 1996 has been represented in the question of whether interconnection requirements should apply to cable operators insofar as they offer

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1654, 106th Cong. (1999) (same); S. 486, 106th Cong. (1999) (providing for the posting of anti-drug messages on federal department and agency websites).

102. *See* H.R. 2534, 106th Cong. (1999) (directing NSF to report on the establishment of high-speed large bandwidth internet access for all public schools and libraries); H.R. 2420, 106th Cong. (1999) (excluding high-speed internet access from services prohibited to incumbent local exchange carriers ("ILECs"), preempting state regulation, excluding from unbundling and resale obligations, and requiring interconnection); S. 1043, 106th Cong. (1999) (exempting internet services from FCC or state public utilities commission regulation, exempting technical standards regulation, and excluding internet services from the resale and unbundling obligations of ILECs.); H.R. 1686, 106th Cong. (1999) (excluding broadband data services from definition of "interLATA" services prohibited to incumbent local exchange carriers without special approval and requiring ILECs to submit plan for offering broadband services, then binding them to follow it but free of price controls); H.R. 1685, 106th Cong. (1999) (covering similar ground); S. 877, 106th Cong. (1999) (providing exemptions from regulation to local exchange carriers providing DSL-capable loop and broadband services).

103. *See* H.R. 2086, 106th Cong. (1999) (funding networking and information technology research). *But see* H.R. 2684, 106th Cong. (1999) (continuing the effort to remove the NSF from managing the domain name space, effective after Sept. 30, 1998).

104. *See* H.R. Con. Res. 182, 106th Cong. (1999).

> Resolved by the House of Representatives (the Senate concurring), That in addressing issues of information technology and electronic commerce policy, the Congress must—(1) focus on a broad spectrum of issues that are essential to the evolution and strength of the American information technology industry; (2) ensure that it plays an enabling and not an inhibiting role in supporting the movement of industry and people into the Information Age; (3) incorporate a principle of minimal and predictable government regulation; and (4) refrain from acting in any capacity that would enshrine or favor specific technologies or standards.

Id.

105. *See* H.R. 1746, 106th Cong. (1999) (delinking funding for schools and health care providers' access to advanced telecommunications capabilities from a tax on telecommunications, providing for equivalent tax from general funds); S. 1004, 106th Cong. (1999) (same).

106. *See* H.R. 3420, 106th Cong. (1999); S. 980, 106th Cong. (1999); S. 770, 106th Cong. (1999); H.R. 1344, 106th Cong. (1999).

broadband access services.[107] The idea that internet service provided by electric utilities can possibly be used to allow consumers who aggregate to provide electricity also to provide internet service was also reintroduced.[108] Wireless communications were enlisted to provide internet access by the elimination of spectrum aggregation limits on spectrum auctioned after December 31, 1999.[109]

There has been more education-related legislation,[110] with some efforts to fund teacher computer training.[111] More creatively, there has been funding of prizes for students to develop educational software, conditioned on the free distribution of that software on the Net to educational institutions.[112]

Fear of "bad" information flows on the Net also has continued. There have been repeated efforts to condition universal service, or even the availability of general federal funds for schools and libraries, on installing filters at internet access points.[113] There has been a crackdown on child pornography on

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107. *See* H.R. 2637, 106th Cong. (1999).

108. *See* H.R. 2645, 106th Cong. (1999) (permitting consumers to combine to form nonprofit municipal electricity systems and, if utilities are permitted to offer internet services, extending such permission to those consumer aggregations).

109. *See* S. 1923, 106th Cong. (1999).

110. *See* S. 1876, 106th Cong. (1999) (requiring a 2001 report on the availability of high-bandwidth access in schools and its utilization); S. 1772, 106th Cong. (1999) (providing for the use of the internet to increase parental involvement in education); H.R. 3008, 106th Cong. (1999) (funding state and local efforts to acquire school library internet access); H.R. 2965, 106th Cong. (1999) (funding educational programming for the internet and for public television); H.R. 2534, 106th Cong. (1999) (directing NSF to report on best ways to develop high-speed large bandwidth internet access for all public schools and libraries); S. 1262, 106th Cong. (1999) (establishing grants to fund internet connections, other media sources, and training of media professionals for schools); S. 1188, 106th Cong. (1999) (establishing grants for teacher training); S. 1180, 106th Cong. (1999) (establishing grants to facilitate using the internet to provide technical assistance and guidance to parents, in order to help students); S. 1154, 106th Cong. (1999) (appropriating funds to develop educational internet-based programming and distance learning capabilities); H.R. 1960, 106th Cong. (1999) (funding state and local efforts to expand the use of internet technology); S. 1029, 106th Cong. (1999) (funding educational programming for the internet and for public television); H.R. 1139, 106th Cong. § 658U (1999) (providing for a study of distance education for child care providers and parents).

111. *See* H.R. 1786, 106th Cong. (1999) (funding teacher training); S. 491, 106th Cong. (1999); H.R. 455, 106th Cong. (1999).

112. *See* H.R. 1786, 106th Cong. (1999); S. 491, 106th Cong. (1999).

113. *See* H.R. 3037, 106th Cong. (1999) (requiring schools and libraries receiving any federal funds to install filters); S. 1545, 106th Cong. (1999); H.R. 2560, 106th Cong. (1999) (requiring schools and libraries receiving any federal funds, not only universal service, to install filters); H.R. 1501, 106th Cong. (1999);

the Net[114] and efforts to curtail prisoners' communications.[115] There have been efforts to protect children from pornography (and violence) on the Net, by nudging the new media industry to restrain itself and facilitating industry collaboration in pursuit of such restraint.[116] Concerns about internet gambling,[117] the sale of prescription drugs over the internet,[118] tobacco sales,[119] and sales[120] and disposal[121] of firearms using the Net round out the list of dangerous communications that have elicited congressional response.

Consumer privacy,[122] spam,[123] communications privacy from government search,[124] and consumer protection issues[125]—

H.R. 896, 106th Cong. (1999); H.R. 543, 106th Cong. (1999); H.R. 368, 106th Cong. (1999) (emphasizing local standard setting, and not establishing federal filtering guidelines); S. 97, 106th Cong. (1999).

114. *See* H.R. 640, 106th Cong. (1999) (providing additional funding to the United States Cybersmuggling Center to fight internet child pornography).

115. *See* H.R. 1930, 106th Cong. (1999) (requiring all sites offering communication with incarcerated individuals to list information about the crime and release date of the prisoner (carriage, access, and search engines are exempt)).

116. *See* H.R. 2036, 106th Cong. (1999) (dealing with sex and violence in entertainment materials generally, including on the internet); H.R. 1855, 106th Cong. (1999) (permitting industry collaboration on controlling the content of entertainment products to limit sexual and violent material available to children); S.J. Res. 23, 106th Cong. (1999) (seeking a study of the effect of violent mass media and internet content on children); H.R.J. Res. 47, 106th Cong. (1999) (same).

117. *See* H.R. 3125, 106th Cong. (1999); H.R. Con. Res. 137, 106th Cong. (1999) (urging regulatory response to report on gambling, including internet gambling); S. 692, 106th Cong. (1999).

118. *See* H.R. 2763, 106th Cong. (1999).

119. *See* H.R. 3007, 106th Cong. (1999) (applying federal labeling requirements for cigarettes to internet advertisements); H.R. 2914, 106th Cong. (1999) (prohibiting internet sales); H.R. 2579, 106th Cong. (1999) (prohibiting cigar sales online).

120. *See* H.R. 1245, 106th Cong. (1999); S. 637, 106th Cong. (1999); H.R. 87, 106th Cong. (1999).

121. *See* H.R. 3020, 106th Cong. (1999); H.R. 1702, 106th Cong. (1999).

122. *See* H.R. 3321, 106th Cong. (1999) (requiring a notice of collection, the method of collection, and intention to disclose, as well as clear online opt-in or opt-out mechanisms; providing access to information collected, and notice of whether information has been sold or disclosed to another; establishing a safe harbor for compliance with industry self-regulation standards; creating a private right of action); S. 1908, 106th Cong. (1999) (requiring GAO study of commercial arrangements in schools and their effects on student privacy); H.R. 2915, 106th Cong. (1999) (prohibiting use of school funds to buy an internet service that engages in collecting information about students under 18); H.R. 1685, 106th Cong. § 301 (1999) (requiring notice of collection practices); S. 809, 106th Cong. (1999) (regulating collection of personally identifiable information and providing for FTC regulations regarding issues such as notice and the ability to opt-out); H.R. 367, 106th Cong. (1999) (restricting disclosure of social security number or linked ma-

in particular against internet fraud[126]—have also continued to appear on the congressional table, as has encryption regulation.[127] The arrival of online brokerage has been marked by the introduction of bills to regulate or facilitate online securities transactions.[128]

Finally, electronic commerce has continued to occupy much of Congress's Net-related attention. There have been more

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terials); H.R. 313, 106th Cong. (1999) (prohibiting disclosure to another person without prior informed written consent).

123. *See* H.R. 3113, 106th Cong. (1999) (creating an FCC-maintained list where individuals may list themselves as having no desire to receive unsolicited commercial e-mail, prohibiting sending spam to listed individuals, and prohibiting any other use of list; creating a private right of action to enforce same, and civil enforcement by FCC; giving ISPs standing to create anti-spam policy and use similar means to enforce it); H.R. 3024, 106th Cong. (1999) (requiring notice, opt-out ability, correct identifying information, and no violation of ISP policy; establishing a safe harbor for ISPs for efforts to block spam); H.R. 2162, 106th Cong. (1999) (prohibiting spam in contravention of ISP's policy, and criminalizing use of the domain name of another in connection with sending an e-mail and thereby causing damage to a computer system); H.R. 1910, 106th Cong. (1999) (focusing on misleading sender information); H.R. 1685, 106th Cong. (1999) (prohibiting sending spam in violation of an ISP's policy, but no requirement that there be a policy prohibition on disguising routing information or source of spam); S. 854, 106th Cong. § 106 (1999) (permitting domain name registrars to reveal information pertaining to a customer, if they provide notice and opportunity to prevent disclosure); S. 759, 106th Cong. (1999) (prohibiting spam after recipient notifies of unwillingness to receive; prohibiting nondisclosure of source/routing; creating ISP level opt-out option, and prohibiting spamming to a domain that has collectively opted-out).

124. *See* S. 854, 106th Cong. (1999) (equalizing treatment of internet addressing information to dialing and signaling information for purposes of permitting government agency use of pen registers).

125. *See* Gramm-Leach-Bliley Act, Pub. L. No. 106-102, § 729, 1999 U.S.C.C.A.N. (113 Stat.) 1337, 1476 (providing for a study of online brokerage practices); H.R. 3007, 106th Cong. (1999) (applying federal labeling requirements for cigarettes to internet advertisements); S. 1015, 106th Cong. (1999) (addressing online securities transactions); S. 787, 106th Cong. (1999) (regulating internet-based credit card solicitations); H.R. 900, 106th Cong. (1999) (same).

126. *See* H.R. 1862, 106th Cong. (1999) (providing for a study of targeting of seniors for fraud, including internet fraud); S. 751, 106th Cong. (1999) (addressing telemarketing to seniors); S. 699, 106th Cong. (1999) (protecting from telemarketing fraud over internet); H.R. 612, 106th Cong. (1999).

127. *See* S. 854, 106th Cong. (1999) (granting freedom to use encryption, and limiting power to mandate key escrow or support it by procurement practices); S. 798, 106th Cong. (1999) (adopting several policy principles: permitting the use of encryption; preferring market-driven encryption policy; abstaining from regulation; abstaining from imposing weak encryption as a condition on participating in government procurement programs or otherwise communicating with the government); H.R. 850, 106th Cong. (1999) (granting freedom to encrypt and to sell; prohibiting mandatory key escrow).

128. *See* S. 1015, 106th Cong. (1999); S. 921, 106th Cong. (1999).

statements about the need explicitly to foster electronic commerce.[129] There have been attempts to make the internet tax freedom concept perpetual,[130] to prohibit the Federal Communications Commission ("FCC") from imposing access charges on internet access services,[131] and to make internet tax freedom a stable part of United States foreign trade policy.[132] There has been a continued focus on developing the use of electronic commerce in government procurement.[133] There have been more efforts to study the effect of the internet on access to price and other attributes of service in real-world markets and to use

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129. *See* S. 1912, 106th Cong. (1999) (creating Center of Excellence for Electronic Commerce to promote electronic commerce and to facilitate adoption by government agencies); Millennium Digital Commerce Act, H.R. 3220, 106th Cong. (1999); S. Res. 207, 106th Cong. (1999) (justifying resolution to press administration to open up Japanese telecommunications markets in terms of Japan's lag in electronic commerce); S. 1494, 106th Cong. (1999) (funding a program in the National Institutes of Standards and Technology to develop, disseminate, and foster electronic commerce technologies and know-how); H.R. 1993, 106th Cong. (1999) (directing International Trade Administration to assist small businesses in exporting and using electronic commerce); S. 921, 106th Cong. (1999) (addressing online securities transactions); S. 761, 106th Cong. (1999) (validating digital signatures and writings; providing for a study of legal barriers to development of electronic commerce).

130. *See* H.R. 3252, 106th Cong. (1999) (making the tax moratorium permanent; expressing the sense of Congress that the ban on e-commerce tariffs should be the permanent United States trade policy); S. 1611, 106th Cong. (1999) (making the United States moratorium permanent; expressing the sense of the Senate that the trade representative should advocate no taxes or discriminatory tax on e-commerce); S. 328, 106th Cong. (1999) (making the tax moratorium permanent). *But see* S. 1433, 106th Cong. (1999) (creating a special excise tax for all mail order, catalog, and internet-based sales not subject to any state sales tax and applying that tax to a fund to defray teachers' salaries).

131. *See* H.R. 1291, 106th Cong. (1999).

132. *See* S. 1871, 106th Cong. (1999) (authorizing negotiation of a free trade agreement with Chile covering, among other issues, measures to promote electronic commerce); S. 1870, 106th Cong. (1999) (authorizing negotiation of a free trade agreement with Singapore covering, among other issues, measures to promote electronic commerce); S. 1869, 106th Cong. (1999) (authorizing negotiation of a free trade agreement with Republic of Korea covering, among other issues, measures to promote electronic commerce); H.R. Con. Res. 190, 106th Cong. (1999) (urging President to seek global consensus on permanent moratorium on tariffs for electronic commerce and on special internet-related taxes); S. Con. Res. 52, 106th Cong. (1999) (opposing "global bit tax" proposed by the United Nations Human Development Report of 1999); H.R. 2670, 106th Cong. (1999) (conditioning appropriation of United Nations dues on the United Nations and its instrumentalities not taxing internet activity).

133. *See* H.R. 2561, 106th Cong. (1999) (funding Electronic Commerce Resource Centers and Joint Electronic Commerce Program Office).

the Net to facilitate efficient real-world markets.[134] In the arena of developing the property and contract regimes to undergird electronic commerce, there have been database protection bills,[135] bills concerning digital signature[136] and electronic contracts,[137] and attempts to regulate the trademark/domain name issue.[138] There have also been attempts to legislate Y2K litigation control.[139]

D. Public Laws: 1990–99

The bills enumerated above reflect the range of issues considered by congressional representatives to be sufficiently important to propose as a bill. The list of public laws actually passed over this period suggests which issues commanded an effective majority of congressional representatives who thought them sufficiently important to make them laws.

In infrastructure regulation, the Telecommunications Act of 1996's attempt to, among other things, harness telephone and cable providers to build the broadband network was obviously one of the most expansive laws.[140] So too were its universal service provisions and their inclusion of internet access for schools and rural healthcare providers.[141] The Next Generation

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134. *See* S. 1362, 106th Cong. (1999) (providing for an airline industry study); H.R. 2200, 106th Cong. (1999) (regarding the airline industry); H.R. 1828, 106th Cong. (1999) (authorizing Secretary of Energy to compile a database of price comparisons of electricity providers); S. 1047, 106th Cong. (1999) (addressing pricing and terms information about electric suppliers); H.R. 1030, 106th Cong. (1999) (regarding the airline industry); H.R. 1000, 106th Cong. (1999) (same).

135. *See* H.R. 1858, 106th Cong. (1999); H.R. 354, 106th Cong. (1999).

136. *See* H.R. 3220, 106th Cong. (1999) (recognizing digital signature as appropriate); H.R. 1714, 106th Cong. (1999) (validating and limiting states' ability to legislate to regulate validity); H.R. 1685, 106th Cong. (1999); S. 921, 106th Cong. (1999) (concerning securities transactions); S. 761, 106th Cong. (1999).

137. *See* H.R. 3220, 106th Cong. (1999) (validating electronic commerce; requiring the United States, to the extent possible, to validate international electronic transactions); H.R. 1714, 106th Cong. (1999).

138. *See* Anticybersquatting Consumer Protection Act, S. 1948, 106th Cong. §§ 3001–3010 (1999); Trademark Cyberpiracy Prevention Act, H.R. 3028, 106th Cong. (1999); Domain Name Piracy Prevention Act of 1999, S. 1461, 106th Cong.; Trademark Cyberpiracy Prevention Act, S. 1255, 106th Cong. (1999) (a later version of the Anticybersquatting Act).

139. *See* S. 1138, 106th Cong. (1999); H.R. 775, 106th Cong. (1999).

140. *See* Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified as amended in scattered sections 15, 18, and 47 U.S.C.).

141. *See* Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act of 1998, Pub. L. No. 105-119, §§ 622–623,

Internet Research Act of 1998[142] and other means of funding internet development[143] continued the government's commitment to engagement in the development of the Net—although the prohibition on the NSF from expending funds on entering into contracts regarding management of the domain name and numbering system after September 30, 1998[144] suggested an ambivalence. Funding for the development of educational uses[145] and cultural development are also noteworthy.[146]

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111 Stat. 2440, 2521–22 (codified as amended at 47 U.S.C. § 254 note (Supp. III 1997)) (requiring a report from the universal service board on the effect of certain definitions in telecommunications act on universal service, including internet access).

142. Pub. L. No. 105-305, 1998 U.S.C.C.A.N. (112 Stat.) 2919 (codified as amended at 15 U.S.C.A. §§ 5501 note, 5513 (West Supp. 1999)).

143. *See* National Science Foundation Authorization Act of 1998—Appropriations, Pub. L. No. 105-207, 1998 U.S.C.C.A.N. (112 Stat.) 869 (codified as amended at 42 U.S.C.A. §§ 1861–1862, 6686 (West Supp. 1999)) (approving $48 million appropriation to NSF for Next Generation Internet for fiscal years 1998–99); 1998 Supplemental Appropriations and Rescissions Act, Pub. L. No. 105-174, § 8003, 1998 U.S.C.C.A.N. (112 Stat.) 58, 94 (legalizing and ratifying fees collected as part of the domain registration fee, and transferring them to NSF, to be used for internet intellectual infrastructure including Next Generation Internet); Strom Thurmond National Defense Authorization Act for Fiscal Year 1999, Pub. L. No. 105-261, § 215, 111 Stat. 1920, 1950 (1998) (appropriating funds for Next Generation Internet development).

144. *See* Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, Pub. L. No. 106-74, tit. III, 1999 U.S.C.C.A.N. (113 Stat.) 1047, 1090–91; Veterans Affairs and HUD Appropriations Act, Pub. L. No. 105-276, tit. III., 1998 U.S.C.C.A.N. (112 Stat.) 2461, 2505 (codified as amended in scattered sections of U.S.C.).

145. *See* Consolidated Appropriations Act, 2000, Pub. L. No. 106-113, App. H.R. 3424, tit. III, 2000 U.S.C.C.A.N. (113 Stat.) 1501, 1537-251 (funding the Florida Dep't of Education program for internet-based teacher recruitment); Higher Education Amendments of 1998, Pub. L. No. 105-244, 1998 U.S.C.C.A.N. (112 Stat.) 1581 (codified as amended in scattered sections of 20 U.S.C.) (providing grants for developing distance learning; requiring the maintenance of an accessible federal database of information about financial assistance for education; establishing the Web-Based Education Commission to study educational software and internet applications); Workforce Investment Act of 1998, Pub. L. No. 105-220, 1998 U.S.C.C.A.N. (112 Stat.) 936 (codified as amended in scattered sections of 29 U.S.C.) (authorizing funds for pilot projects on distance education); Departments of Labor, Health and Human Services, and Education and Related Agencies Appropriations Act, 1993, Pub. L. No. 102-394, tit. III, 106 Stat. 1792, 1819 (1992) (codified as amended at 20 U.S.C. §§ 106a, 130a, and 4363 (1994)) (funding demonstration of online access to library bibliographic databases); Excellence in Mathematics, Science, and Engineering Education Act of 1990, Pub. L. No. 101-589, § 221, 104 Stat. 2881, 2892 (repealed 1994) (funding grants for research into developing interactive linkages among schools, and technologies to enable "two-way audio and video interactive telecommunications and computer linkages designed to be used in conjunction with each other").

As with the bills, the public laws too began to rely heavily on the Net to disseminate public information, beginning with dissemination of the legislative materials themselves early in the 1990s,[147] and then continuing to rely on the Net more generally to disseminate government information,[148] including gov-

146. *See* Legislative Branch Appropriations, 1999, Pub. L. No. 105-275, § 301, 1998 U.S.C.C.A.N. (112 Stat.) 2430, 2445 (funding American Folklife Center in Library of Congress).

147. *See* Government Printing Office Electronic Information Access Enhancement Act of 1993, Pub. L. No. 103-40, 107 Stat. 112 (codified as amended at 44 U.S.C. §§ 101 note, 4101 note, 4103 note (1994)) (directing GPO to make Congressional Record, Federal Register, and other information available online at incremental cost of providing it).

148. *See* Consolidated Appropriations Act, 2000, Pub. L. No. 106-113, 1999 U.S.C.C.A.N. (113 Stat.) 1501, 1503 (requiring the Secretary of State to report on obligations incurred for assistance); Federal Financial Assistance Management Improvement Act of 1999, Pub. L. No. 106-107, § 6, 1999 U.S.C.C.A.N. (113 Stat.) 1486, 1489 (listing agencies exempted from requirements imposed on agencies running financial assistance programs published on OMB internet site); Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2000, Pub. L. No. 106-78, 1999 U.S.C.C.A.N. (113 Stat.) 1135; Centennial of Flight Commemoration Act Amendments, Pub. L. No. 106-68, 1999 U.S.C.C.A.N. (113 Stat.) 981 (codified as amended at 36 U.S.C.A. § 143 note (West Supp. 1999)) (providing information about the centennial of flight celebration); Treasury and General Government Appropriations Act, 2000, Pub. L. No. 106-58, § 650, 1999 U.S.C.C.A.N. (113 Stat.) 430, 479 (providing information about candidates' filings with FEC and making itemized IRS receipts available online); Veterans Entrepreneurship and Small Business Development Act of 1999, Pub. L. No. 106-50, 1999 U.S.C.C.A.N. (113 Stat.) 233 (providing for Veterans Administration's information); Assistive Technology Act of 1998, Pub. L. No. 105-394, 1998 U.S.C.C.A.N. (112 Stat.) 3627 (codified as amended in scattered sections of 29 U.S.C.) (providing information about the availability of assistive technologies for individuals with disabilities); Energy Conservation Reauthorization Act of 1998, Pub. L. No. 105-388, 1998 U.S.C.C.A.N. (112 Stat.) 3477 (codified as amended in scattered sections of 42, 50, 87, 90, and 106 U.S.C.) (reporting on use of alternative fuel by federal agencies); Veterans Programs Enhancement Act of 1998, Pub. L. No. 105-368, 1998 U.S.C.C.A.N. (112 Stat.) 3315 (providing research findings about health consequences of service in the Gulf War); Omnibus Consolidated and Emergency Supplemental Appropriations Act, 1999, Pub. L. No. 105-277, 1998 U.S.C.C.A.N. (112 Stat.) 2681 (listing countries receiving aid from the United States); Commission on the Advancement of Women and Minorities in Science, Engineering, and Technology Development Act, Pub. L. No. 105-255, 1998 U.S.C.C.A.N. (112 Stat.) 1889 (codified as amended at 42 U.S.C.A. § 1885 note (West Supp. 1999)) (reporting on women and minorities in science, engineering, and technology development); Internal Revenue Service Restructuring and Reform Act of 1998, Pub. L. No. 105-206, 1998 U.S.C.C.A.N. (112 Stat.) 685 (codified as amended in scattered sections of 5, 19, 23, 26, and 31 U.S.C.); Agricultural Research, Extension, and Education Reform Act of 1998, Pub. L. No. 105-185, 1998 U.S.C.C.A.N. (112 Stat.) 523 (codified as amended in scattered sections of 7 U.S.C.) (discussing food, animals, and drugs); Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1998, Pub. L.

ernment propaganda and educational campaigns.[149] Similarly, Congress did in fact adopt the notion of using the Net as the proper location for publishing materials required by law to be made public by non-government actors.[150] There were also the beginnings of offering services through the Net,[151] whose efficacy is hinted at in, for example, funds allocated to the non-governmental Center for Missing Children, seen to be an effective user of Net publication to serve the public interest.[152]

The concerns about dangerous communications tended to fare well in Congress, resulting in, for example, the Communications Decency Act of 1996 ("CDA"),[153] the Family Online Pri-

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No. 105-119, § 209, 111 Stat. 2440, 2483 (1997) (codified as amended at 13 U.S.C.A. § 141 note (1999)) (providing Census 2000 information); Balanced Budget Act of 1997, Pub. L. No. 105-33, § 1851, 111 Stat. 251, 281 (codified as amended at 42 U.S.C. § 1395w-21 (Supp. III 1997)) (providing Medicare information); Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1991, Pub. L. No. 101-515, 104 Stat. 2101, 2144 (1990) (codified as amended at 15 U.S.C. § 648a (1994) (funding demonstration of increasing access of small businesses to technology by developing online databases).

149. *See* History of the House Awareness and Preservation Act, Pub. L. No. 106-99, 1999 U.S.C.C.A.N. (113 Stat.) 1330; International Religious Freedom Act of 1998, Pub. L. No. 105-292, § 103, 1998 U.S.C.C.A.N. (112 Stat.) 2787, 2795 (codified as amended at 22 U.S.C.A. § 6413 (West Supp. 1999)) (establishing religious freedom internet site); Savings are Vital to Everyone's Retirement Act of 1997, Pub. L. No. 105-92, 111 Stat. 2139 (codified as amended at 29 U.S.C. §§ 1146–1147 (Supp. III 1997)).

150. *See* Consolidated Appropriations Act, 2000, Pub. L. No. 106-113, 1999 U.S.C.C.A.N. (113 Stat.) 1501, 1503 (funding development of easily searchable labor management reports); Gramm-Leach-Bliley Financial Modernization Act, Pub. L. No. 106-102, § 322, 1999 U.S.C.C.A.N. (113 Stat.) 1338, 1426 (creating the National Association of Registered Agents and Brokers, whose office of consumer complaints should be available using a web site); Omnibus Consolidated and Emergency Supplemental Appropriations Act, 1999, Pub. L. No. 105-277, 1998 U.S.C.C.A.N. (112 Stat.) 2681 (funding creation of system for reporting under Labor-Management Reporting and Disclosure Act of 1959); Savings are Vital to Everyone's Retirement Act of 1997, Pub. L. No. 105-92, 111 Stat. 2139 (codified as amended at 29 U.S.C. §§ 1146–1147 (Supp. III 1997)) (reporting under Labor-Management Reporting and Disclosure Act of 1959).

151. *See* Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2000, Pub. L. No. 106-78, 1999 U.S.C.C.A.N. (113 Stat.) 1135 (requiring online system to issue and report meat export certificates).

152. *See* Missing, Exploited, And Runaway Children Protection Act, Pub. L. No. 106-71, § 2, 1999 U.S.C.C.A.N. (113 Stat.) 1032, 2139.

153. Telecommunications Act of 1996, Pub. L. No. 104-104, § 509, 110 Stat. 56, 137 (codified as amended at 47 U.S.C. § 230 (Supp. III 1997)).

vacy Act,[154] and the Child Online Protection Act ("COPA").[155] There was also a study on the availability of pornography to children on the internet,[156] a declaration that prisoners should not have unsupervised internet access,[157] and a sentencing enhancement for sexual abuse of children if a computer is used to solicit the child or organize the abuse.[158] Along parallel lines, there were studies of internet gambling[159] and the availability of information on the Net regarding terrorism.[160]

Children also provided the binding agent that allowed at least one form of general consumer protection legislation to pass—in the form of the Children's Online Privacy Protection Act ("COPPA").[161] That Act recently has been implemented in FTC regulations effective April 21, 2000.[162] In the consumer protection area, Congress also required a study of the appropriate regulation for online banking.[163]

The drive to enhance and facilitate electronic commerce was similarly effective in Congress. The Internet Tax Freedom Act was passed,[164] there was a declaration that the internet

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154. *Id.* (protecting ISPs from liability as publishers for providing filtering services to families).

155. Omnibus Consolidated and Emergency Supplemental Appropriations Act, 1998, Pub. L. No. 105-277, § 1301, 1998 U.S.C.C.A.N. (112 Stat.) 2681-732.

156. *See* Protection of Children from Sexual Predators Act of 1998, Pub. L. No. 105-314, § 901, 1998 U.S.C.C.A.N. (112 Stat.) 2974, 2991 (codified as amended at 18 U.S.C.A. § 1470 note (West Supp. 1999)).

157. *See id.* § 802, 112 Stat. at 2990.

158. *See id.* § 503, 112 Stat. at 2980 (codified as amended at 18 U.S.C.A. § 944 note (West Supp. 1999)).

159. *See* National Gambling Impact Study Commission Act, 1996, Pub. L. No. 104-169, 110 Stat. 1482 (codified as amended at 18 U.S.C. § 1955 note (Supp. IV 1998)).

160. *See* Technical Corrections to Title 17, Pub. L. No. 106-44, 1999 U.S.C.C.A.N. (113 Stat.) 221 (1999).

161. Children's Online Privacy Protection Act of 1998, Pub. L. No. 105-277, §§ 1301–1308, 1998 U.S.C.C.A.N. (112 Stat.) 2681, 2681-728 to 2681-735 (codified as amended at 15 U.S.C.A §§ 6501–6506 (West Supp. 1999)) (prohibiting the collection of personal information from children without parental consent and giving parents the right to revoke consent and to obtain access to information collected about their child).

162. *See* FTC, Children's Online Privacy Protection Rule, 16 C.F.R. § 312 (1999).

163. *See* Gramm-Leach-Bliley Act, Pub. L. No. 106-102, § 729, 1999 U.S.C.C.A.N. (113 Stat.) 1337, 1476.

164. *See* Internet Tax Freedom Act, Pub. L. No. 105-277, §§ 1100–1104, 1998 U.S.C.C.A.N. (112 Stat.) 2681, 2681-719 to 2681-726 (codified as amended at 47 U.S.C.A. § 151 note (West Supp. 1999)) (addressing internet access and multiple or discriminatory taxes on electronic commerce).

should be free of tariffs,[165] and there was funding allocated for the use of electronic commerce in government procurement.[166] The DMCA[167] and the Anticybersquatting Consumer Protection Act[168] were passed, and there was funding allocated for infrastructure tied to a study of the effects of domain name registration policy on trademark owners.[169] Finally, there were Y2K laws creating litigation exemptions[170] and facilitating collaboration among industry participants to resolve Y2K issues.[171]

II. MAPPING NET REGULATION

The appearances of the Net in legislation and legislative efforts can be organized usefully into three clusters.

In the first cluster, legislation attempts to harness technology to serve what are perceived to be governmental goals unrelated to the Net. These include: enhancing education by providing school access and teacher training; funding internet

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165. *See* Omnibus Consolidated And Emergency Supplemental Appropriations Act, 1999, Pub. L. No. 105-277, § 1203, 1998 U.S.C.C.A.N. (112 Stat.) 2681, 2681-727 (codified as amended at 19 U.S.C.A. § 2241 note (West Supp. 1999)).

166. *See* Act of Oct. 25, 1999, Pub. L. No. 106-79, 1999 U.S.C.C.A.N. (113 Stat.) 1212 (earmarking funds for electronic commerce resource centers); National Defense Authorization Act for Fiscal Year 1998, Pub. L. No. 105-85, 111 Stat. 1629 (1997) (codified as amended at 41 U.S.C.A. § 426a (West Supp. 1999)).

167. Sonny Bono Copyright Term Extension Act, Pub. L. No. 105-298, 1998 U.S.C.C.A.N. (112 Stat.) 2827 (codified as amended at 17 U.S.C.A. § 101 note (West Supp. 1999)).

168. Anticybersquatting Consumer Protection Act, Pub. L. No. 106-113, §§ 3001–3010, 1999 U.S.C.C.A.N. (113 Stat.) 1537, 1537-537 to 1537-544 (codified as amended at 15 U.S.C.A. § 1051 note (West Supp. 1999)).

169. *See* Next Generation Internet Research Act of 1998, Pub. L. No. 105-305, 1998 U.S.C.C.A.N. (112 Stat.) 2919 (codified as amended at 15 U.S.C.A. § 5501 note (West Supp. 1999)) (supplementing the Next Generation Internet Research Act with a study of the effect on trademark rights of adding new generic top-level domains). Astonishingly, this addition prompted Senator Patrick Leahy's statement that at long last Congress was putting the horse before the cart—i.e., trademark policy was driving domain name policy. *See* 144 CONG. REC. S12155 (daily ed. Oct. 9, 1998) (statement of Sen. Leahy).

170. *See* Y2K Act, Pub. L. No. 106-37, 1999 U.S.C.C.A.N. (113 Stat.) 185 (limiting Y2K litigation and establishing consumer protection from mortgage foreclosure stemming from Y2K problems).

171. *See* Year 2000 Information and Readiness Disclosure Act, Pub. L. No. 105-271, 1998 U.S.C.C.A.N. (112 Stat.) 2386 (codified as amended at 15 U.S.C.A. § 1 note (West Supp. 1999)) (making Y2K readiness reports inadmissible as evidence in most contract claims; temporary exemption from antitrust laws for collaboration among competitors; setting up councils to work on readiness in the federal government).

access in libraries; publishing government information and information required by law to be published by non-government actors; and communicating with government by opening up the process of public comment on regulations. The tax breaks, trade policy, and procurement aspects of support for electronic commerce could also be seen as falling within this category—as instances of the industrial policy of a nation steering its industrial sector to an area where the government sees the greatest welfare gains.

While these legislative efforts may, at first glance, seem to harness technology—defined independently of these efforts—to serve pre-existing governmental goals, a review of some of the actual uses suggests that the technology can alter the perceived role of government. This change in the perception of government's role can in turn affect the direction of technological development, as technology seeks to respond to facilitate the new role. When the declining cost of communication leads Congress to provide Congressional Research Service products online,[172] we might be observing a slight shift in the perceived role of government publication, from a means of assuring transparency of government, to a means of providing a public good: information. If we see low-cost communications being harnessed to provide significantly better real-time or near-real-time feedback mechanisms for public comment,[173] we might be observing a slight shift from a good-administration conception of government—with comment and publication maintained for transparency purposes—to a conception of government as implementing the product of public discourse—with publication and feedback serving a deliberative, rather than a monitoring, function.

As more public functions are performed on the Net, and are enhanced and altered by the Net, its role in people's lives is affected. The machine through which you debate political issues with your community plays a different role in your life

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172. *See, e.g.*, H.R. 654, 106th Cong. (1999); S. 393, 106th Cong. (1999); H.R. 3131, 105th Cong. (1998); S. 1578, 105th Cong. (1998).

173. *See, e.g.*, H.R. 2607, 106th Cong. (1999) (requiring a comprehensive report on commercial space transportation to include comments collected from the public on various relevant government web sites); H.R. 3546, 105th Cong. (1998) (seeking to use internet forums nationwide to discuss social security); S. 1882, 105th Cong. § 303 (1998) (permitting the Commission on Education of the Deaf to conduct hearings on the internet to enhance participation and feedback).

than the machine through which you shop for Christmas presents. The social construction of the Net is affected by the extent to which it is understood and treated as a means for public participation, as a means for study and education, or as the great shopping mall in the sky. That social construction will be affected by the extent to which, and the way in which, the public uses the Net to provide traditional public goods like education, civic participation, or information about the world we share as citizens and autonomous persons.

The second cluster of legislative actions encompasses efforts aimed directly at fostering the advancement of Net infrastructure. These include primarily physical infrastructure regulation, as well as investment in research and development of the intellectual infrastructure. This is not to say that all such investments are apolitical, aimed solely at some commonly-held sense of optimal development. Competing bills seeking to fund or defund the NSF's Next Generation Internet efforts suggest debates over the role that public investment and oversight should play in infrastructure development. There are questions of just how freely the market can provide for infrastructure, both physical and intellectual. Investments in research and development indicate at least some concern that markets will not invest optimally; regulation of incumbent carriers suggests the same for the physical infrastructure market. There are disagreements over which set of regulations will best achieve infrastructural development—whether, for example, cable carriers who offer broadband data carriage must interconnect with competing ISPs or not.[174]

As I have explained in detail elsewhere,[175] the way that our infrastructure is built affects the distribution of control over content or, in other words, who gets to say what to whom, and who decides these questions. To take the example most relevant in late 1999 and early 2000: if cable broadband develops with a relatively large difference between upstream and down-

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174. *See, e.g.*, H.R. 2637, 104th Cong. (1995); *see also* FCC Staff Report, *Broadband Today*, Oct. 1999 (visited Jan. 28, 2000) <http://www.fcc.gov/Bureaus/Cable/News_Releases/1999/nrcb9017.html>.

175. *See* Yochai Benkler, *Communications Infrastructure Regulation and the Distribution of Control over Content*, 22 TELECOMM. POLICY 183 (1998); Yochai Benkler, *Overcoming Agoraphobia: Building the Commons of the Digitally Networked Environment*, 11 HARV. J.L. & TECH. 287 (1998) [hereinafter *Overcoming Agoraphobia*].

stream capabilities, and if its owners prohibit home consumers from using their home service to run a server[176] from private homes, then this system begins to resemble more of a broadcast model than what, throughout most of the 1990s, was our understanding of the widely decentralized internet model. Whether one believes that such a shift would be desirable—as a mechanism to reduce information overload—or undesirable—because it would undermine the diversity made possible by the Net—is less important, at this point, than to recognize that those are the stakes of such choices.

Moreover, the general acceptance of the assumption that infrastructure will be privately deployed and owned limits the imagination in terms of thinking of solutions for issues of control over infrastructure. Debates over universal service, for example, traditionally fall within the conceptual area of telecommunications regulation, and increasingly are focused on the most efficient method of subsidizing the purchase of telecommunications services in a private market. In the bills, however, we see a whiff of a possibility of an alternative approach in the consumer-aggregation approach to electric utilities.[177] The basic idea is that consumers can aggregate, either voluntarily or, more interesting and likely, through municipal government, to provide electricity publicly. As electric utilities come to be seen as potential providers of information infrastructure,[178] so too we see these municipal consumer aggregations become the first legislatively-empowered instances of public information infrastructure. The same model, even more simply, could suggest a series of publicly-funded municipal or otherwise local networks for high-speed access to the Net.

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176. *See* Peter H. Lewis, *Picking the Right Data Superhighway*, N.Y. TIMES, Nov. 11, 1999, at G1 (surveying broadband services and finding that "[t]he two leading cable data services, Time Warner's Roadrunner and AT&T Cable's @Home, forbid residential customers to run Web server computers on the network").

177. *See, e.g.*, H.R. 4798, 105th Cong. § 206 (1998) (permitting consumers, as part of general restructuring of electric industry, to combine to form nonprofit municipal electricity services, or other nonprofit provision mechanisms, to provide services like those of electricity companies and permitting telecommunications services, including internet service, to those consumer aggregations if permitted to electricity providers); H.R. 2645, 104th Cong. § 206 (1995) (same).

178. This perception is given its official stamp in the Telecommunications Act of 1996, in which Congress attempts to create regulatory incentives for public utilities to enter the telecommunications field. *See* 47 U.S.C. §§ 151–161 (Supp. III 1997).

Whether these networks are economically feasible, and why they are normatively appealing, are questions I have addressed elsewhere.[179] It suffices to say that the cost of setting up a wireless public system, even if only as a carrier of first or last resort for time-insensitive communications, need not be so great as to exclude a political conversation of whether it might be as justified to use the public purse for this purpose as to use public funding for maintaining a public roadway system.[180] Why would we want such infrastructure? For the same reasons we want public schools, libraries, or scientific labs: because the capacity to communicate—to produce, use, and receive information—is the kind of good whose distribution and structure have enormous normative consequences for our democratic culture and our capacity for personal autonomy—consequences we may not want to leave to markets to determine.

The importance of the question of whether infrastructure is privately or publicly owned (or not owned at all[181]) is partly dependent on our regulatory response to the question of the relationship between ownership over physical infrastructure and control over content. In the case of the broadcast spectrum, for example, "ownership" over a license provides the owner with complete control over content, subject to government regulation. In the case of cable, most of the capacity is completely controlled by the owner of the cables, with much less regulatory intervention, but some portions of the capacity cannot be controlled by the infrastructure owner at all—as with must-carry channels and access channels. In the case of telephones or telecommunications carriers, ownership over the infrastructure entails, by definition,[182] no control over the content. Which model will prevail at the physical layer of the digi-

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179. *See* Yochai Benkler, *A Speaker's Corner Under the Sun*, *in* THE COMMODIFICATION OF INFORMATION: POLITICAL, SOCIAL, AND CULTURAL RAMIFICATIONS (Niva Elkin-Koren & Neil W. Netanel eds., forthcoming 2000).

180. *See Overcoming Agoraphobia*, *supra* note 175, at 328–30 (describing field studies conducted by David Hughes). For a series of reports on Hughes's work, see Old Colorado City Communications and the National Sciences Foundation, *Progress Reports* (visited Jan. 28, 2000) <http://wireless.oldcolo.com>.

181. Such would be the case with license-free spectrum. *See generally Overcoming Agoraphobia*, *supra* note 175.

182. *See* Telecommunications Act of 1996, 47 U.S.C. § 153(43) (Supp. III 1997) (defining telecommunications as the "transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received").

tal environment will have significant consequences on the relative role of owners of that physical layer in controlling information flows on the Net.

To return to the example of cable access, if AT&T can exclude all competitors from using its system to provide internet access,[183] and if it can also decide to install a filter for certain kinds of information—say, because it believes a "safe" service will draw more consumers—then, *vis-à-vis* its subscribers, that information does not exist as long as the subscribers continue to use a cable modem. Depending on the availability of alternative facilities-based providers who are common carriers—digital subscriber lines ("DSL") being the most relevant today—who do not control the information, and depending on consumers' switching costs, the possibility that the contents of some pipelines will be controlled by their owners could give these owners significant control over the flow of information to and from homes they serve.

The third cluster of issues on Congress's legislative agenda during the 1990s directly concerns control over information. These efforts at regulation respond to radical changes that the Net has wrought on traditional structures of control over information flows. Where doors and locked bureaus could once protect privacy, data-mining and encryption now do battle over whether there will be more privacy than in the pre-Net environment, or less. Where clearly-demarcated copies of information goods—like books or records—once defined the boundaries of control that intellectual property owners had over their products, technological protection measures and licenses do battle with digital duplication and transmission to determine whether owners or users will gain more control over the information products they own, or use, respectively. Where brown paper wraps, the watchful eye of the store keeper or the parent, and government and social regulation once controlled access to "dangerous materials," kids more technologically attuned than their parents and users who seek out or provide "dangerous materials" can now produce and access these materials at lower cost, and much freer of the traditional means of social surveillance, than ever before. This third cluster is a series of laws attempting to establish the terms of control over information flows, given the shake-up of the technological parameters that

183. *See Broadband Today*, *supra* note 174.

defined the boundaries of control before the Net. These laws are the subject of Part III.

III. DISTRIBUTING CONTROL OVER INFORMATION

Pornography regulation, privacy and encryption regulation, the DMCA, and the Anticybersquatting Bill all have similar structures as forms of Net regulation. They all perceive a destabilizing effect that the Net has on the pre-Net equilibrium of control over certain kinds of information, and all intervene to settle the lack of equilibrium by setting the parameters for a new pattern of control over the information flows on the Net.

This Part looks at a series of such events, and outlines a pattern of regulatory impulses, responses, and effects by tracking a number of instances of Net regulation through the destabilization to which they respond, the new patterns of control the technological shift makes possible, and the actual regulatory choice made. The result of this exercise should be a plausible method for analyzing new Net regulation issues that fit this pattern, allowing a somewhat removed analysis of proposed laws whose normative implications may be quite different than those expressly engaged by their proponents.

A. Destabilization

1. Pornography and Dangerous Information

Over the course of the twentieth century, pornography regulation in the United States has gone from a practice of general enforcement of public morality—personified by Anthony Comstock[184]—to a combination of direct enforcement of public morality against very extreme instances of morally unpopular sexual depictions (contemporary definitions of obscenity),[185] and protection of children from less extreme sexual depictions that are still morally disfavored by the majority,[186] which functionally segregates these unpopular sexual depic-

184. *See* EDWARD DE GRAZIA, GIRLS LEAN BACK EVERYWHERE: THE LAW OF OBSCENITY AND THE ASSAULT ON GENIUS 3–7 (1992).

185. *See* Miller v. California, 413 U.S. 15 (1973).

186. *See* Denver Area Ed. Telecomms. Consortium, Inc. v. FCC, 518 U.S. 727 (1996); FCC v. Pacifica Found., 438 U.S. 726 (1978).

tions from the information environment of most of the population.[187] In an information environment composed of print, broadcast, telephone, and film, this settlement was satisfactory to the moral mainstream. Mainline print is kept "clean" by market factors, while niche printers can be physically segregated, their products wrapped in brown paper or placed behind a curtain.[188] Broadcasters are tightly regulated, and even criticism of the broadcast censorship system itself can constitutionally be kept "clean" in its modes of expression.[189] Film can only be accessed in designated theaters, where gatekeepers and ratings can keep children and honest people out. For more conservative communities, these theaters themselves may be segregated geographically.[190]

The introduction of video was very simple to assimilate into the book or magazine model—with segregation in the store, and in-home viewing sufficiently segregated from the public sphere so as to prohibit imposition of public morality regulation, and so as to be sufficiently within the control of parents. Cable and the introduction of broadcast-like phone services—the dial-a-porn services—were more difficult to assimilate. They could be accessed by anyone, from anywhere, and were thus "in the public sphere" and more troubling to those who had come to rely on the status quo to provide a more-or-less "clean" environment. They could be accessed by children from every home. Both of these media were therefore problematic for the status quo, and the solutions to the disturbance they caused were also similar. Dial-a-porn was constitutionally protected, but it was acceptable to require providers to use child-resistant mechanisms to exclude children and, presumably, unsuspecting adults.[191] Pornography on cable may constitutionally be subjected to the same kinds of restraints.[192] And, as it turned out, it may be subjected to even more re-

187. *See* Ginsberg v. New York, 390 U.S. 629, 650–71 (1968) (Douglas, J., dissenting).

188. *Compare id. with* Butler v. Michigan, 352 U.S. 380 (1957).

189. *Compare Pacifica Found.*, 438 U.S. at 751–55 (reproducing a verbatim copy of the text of George Carlin's monologue in an apparent attempt to show its repulsiveness but instead making all too clear that it was social satire) *with* Cohen v. California, 403 U.S. 15, 25 (1971) ("[I]t is nevertheless often true that one man's vulgarity is another's lyric.").

190. *See* City of Renton v. Playtime Theatres, Inc., 475 U.S. 41 (1986).

191. *See* Sable Communications of Cal. v. FCC, 492 U. S. 115, 130–31 (1989).

192. *See Denver Area*, 518 U.S. at 757–79.

straints—to those necessary to banish the porn from the one public sphere into which an adult or child in the late 1980s and early 1990s might unsuspectingly have wandered: leased access cable channels.[193]

The introduction of the Net caused a much more significant disturbance than any previous technological change since the abandonment of the general acceptability of morality regulation per se. This is so for a number of reasons. The most important reason is organizational. The Net eliminated the intermediaries that, in previous technologies, were used as gatekeepers to control the dissemination of, and access to, pornographic materials. Gone were the editor, the magazine or video store owner, the broadcasters, the cable operator, or even the telephone company. Anything that anyone was willing to put online was available directly to anyone else, using facilities that saw nothing but streams of zeros and ones. This not only eliminated organizational control points, but also social approbation control points—the need to look someone in the eye in order to rent or buy the thing.

Second, the Net dramatically reduced producers' production and distribution costs. Anyone could put his or her fantasies online at a cost of no more than spare time, or exhibit their photographs at the cost of scanning them. To add insult to injury, it made available to mainstream users pornography that was much more "obscene" than they would normally be able to get their hands on, and created room for more outrage—an outrage fanned by the infuriating fact that many kids could actually navigate this thing better than the adults we usually think of as their "controllers."

2. Consumer Privacy

The sources of destabilization in the area of consumer privacy are the increase in processing power and decline in its price, and the characteristic of digital communications that they carry information about themselves as an integral part of the communication. In the United States, the problem of consumer privacy was first raised significantly in the 1970s.[194]

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193. *See id.* at 737–53.

194. *See, e.g.*, SECRETARY'S ADVISORY COMM. ON AUTOMATED PERSONAL DATA SYSTEMS, 93D CONG., RECORDS, COMPUTERS, AND THE RIGHTS OF CITIZENS

The practice of businesses collecting and sharing information about the purchasing habits of their consumers, and using this information to profile users so as better to target them for advertising and offers, has been growing ever since. The difference today is the amount of information available in processible form, and how easy it is to process it. When many purchases were made in cash at local, separate stores, collecting information was extraordinarily expensive. Financial services companies and mail order vendors could keep records on consumption patterns, but information about books, records, groceries, and many other consumer goods was lost at the point of information intake. Increasing quality of computing and networking enabled more sharing of this information. As we moved to electronic payment systems with the rise of credit cards, there was also a rise in the number of information intake points—any point of sale where a credit card was used was a point of information about the purchasing habits of an identifiable person. As computing became cheaper, checkout counter registers could be transformed into information collection and communication points. With the rise of the Net, every move, whether part of a purchase or not, becomes a potential point of information collection, for every move entails a series of information exchanges between the source of the information and its user. All of these exchanges are in machine-readable form and they are all eminently capable of retransmission and resale to other users of a consumer's personal profile.

The result is the possibility of an online life that is more or less completely subject to surveillance by commercial companies. The destabilization comes from the fact that as a society we value privacy quite highly, and in the past could rely on the significant imperfections in the system of collection, processing, and dissemination of information about our lives to protect that privacy. In the digitally networked environment, we can, as a practical matter, be pervasively seen, and our actions can be comprehensively recorded, processed, and shared or sold among others without our being able to have any say at all.[195]

(1973); THE PRIVACY PROTECTION STUDY COMM., PERSONAL PRIVACY IN AN INFORMATION SOCIETY 345–91 (1977) (discussing government access to personal records).

195. *See* Julie E. Cohen, *A Right to Read Anonymously: A Closer Look at "Copyright Management" in Cyberspace*, 28 CONN. L. REV. 981 (1996); James Boyle, *Foucault in Cyberspace: Surveillance, Sovereignty, and Hard-Wired Cen-*

3. Encryption

The first destabilizing effect relevant to encryption regulation is simple: better, faster, cheaper processors. As more people have access to faster processors, it becomes more plausible for everyone to use complex encryption algorithms that require processing power to encrypt and decrypt with a key, and are increasingly difficult, not to say impossible, to decrypt without a key.[196] The result is that the advantage government agents have over everyone else when it comes to encrypting and decrypting messages is steadily decreasing. Whether this is a good thing or a bad thing may depend on whether the government agent you are thinking of is an anti-terrorism squad of a democracy or the Stasi.[197] Furthermore, the increasing surveillance possibilities discussed with respect to the destabilization in consumer privacy apply with equal, or greater, force to concerns over government surveillance in a fully digital—and hence machine-searchable—communications environment.

4. Digital Information Goods

Control over information goods is profoundly destabilized by digitization and networking.[198] The basic law regulating control over information goods is copyright law. It is a law deeply rooted in the print environment, and it relies on the technical and economic characteristics of print to delineate the

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sors (1997), *available at* <http://www.wcl.american.edu/pub/faculty/boyle/foucault.htm>; Lawrence Lessig, *The Architecture of Privacy* (1998), *available at* <http://cyber.law.harvard.edu/works/lessig/architecture_priv.pdf>; Jerry Kang, *Information Privacy in Cyberspace Transactions*, 50 STAN. L. REV. 1193 (1998); Julie Cohen, *Examined Lives: Informational Privacy and the Subject as Object*, 52 STAN. L. REV. (forthcoming 2000).

196. *See* A. Michael Froomkin, *It Came From Planet Clipper: The Battle Over Cryptographic Key "Escrow"*, 1996 U. CHI. LEGAL F. 15 (1996) (discussing the importance of cryptography, and the consequences of the availability or lack of keys).

197. *See* Eben Moglen, *So Much for Savages: Navajo 1, Government 0 in Final Moments of Play* (visited Jan. 25, 2000) <http://old.law.columbia.edu/my_pubs/yu-encrypt.html>.

198. *See Intellectual Property Rights in an Age of Electronics and Information: Joint Hearing before the Subcomm. on Patents, Copyrights, and Trademarks and the House Judiciary Comm. Subcomm. on Courts*, 99th Cong. (1986); Pamela Samuelson, *Some New Kinds of Authorship Made Possible By Computers and Some Intellectual Property Questions They Raise*, 53 U. PITT. L. REV. 685 (1992); ELECTRONIC COMMUNICATIONS, *supra* note 4, at 663–80.

boundaries between vendors and buyers. Copyrights are primarily rights in the distribution medium—rights to copy, distribute, and perform or display publicly. The major deviation from this line is the right to make derivative works. This allows producers to capture enough of the value they create to give them incentives, while leaving many uses incapable of monitoring by the producer, or not subject to the owner's exclusive rights, or both. This structure of delineating the boundaries of control mostly around the distribution medium was easily transferred to other distribution media that were relatively simple to control, and could not be easily displaced by user-made copies. Celluloid, broadcast, and records or CDs were sufficiently similar in their distribution characteristics to print to allow for a more-or-less simple extension of the copyright framework to them. It provided a rough and ready, but livable, solution to the tension between the interest in giving producers incentives and the interest in maximizing public access to the information once it is produced.

Digital network distribution is different. Copies are perfect and almost costless, and redistribution is almost costless. This threatens to render the producers' staple rights null. But copies can be encrypted, their use monitored by owners, and click-on licenses can surround each information good with technical and contractual fences much tighter and more impregnable than copyright law ever provided.[199] This renders users' traditional practices of access to information obsolete. The result is that, in both directions, control over information goods can no longer be based primarily on the assumption of relatively clearly defined, but porous, boundaries of the distribution medium. The issue that regulation must resolve is whether this destabilization will result in a more tightly controlled, a more freely flowing, or a more-or-less similarly controlled environment.

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199. *See* Niva Elkin-Koren, *Copyright Policy and the Limits of Freedom of Contract*, 12 BERKELEY TECH. L.J. 93 (1997); Julie E. Cohen, *Copyright and the Jurisprudence of Self-Help*, 13 BERKELEY TECH. L.J. 1089 (1998); Yochai Benkler, *Free as the Air to Common Use: First Amendment Constraints on Enclosure of the Public Domain*, 74 N.Y.U. L. REV. 354 (1999); Mark A. Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 CAL. L. REV. 111 (1999); Pamela Samuelson, *Intellectual Property and the Digital Economy: Why the Anti-Circumvention Regulations Need to be Revised*, 14 BERKELEY TECH. L.J. 519 (1999).

5. Trademarks and Domain Names

The destabilizing effect of the Net on trademarks is a result of the radical reduction in the cost of searching for information on the Net. In the physical business environment, searching for products to compare, say, price and quality, is costly. Brand names and trademarks reduce search costs by declaring location and price/quality information in easily-accessible ways. The mass mediated information environment works well with this role of trademarks, for it provides a relatively costly way of communicating this self-designation of price and quality. Such a costly method excludes many potential competitors—who would crowd the attention of consumers with competing marks—and permits a relatively small number of businesses to acquire instant, human-memory-based recognition as carrying certain attributes of the price/quality tradeoff. Hence the emergence of the category of "famous marks" that is increasingly receiving property-like, rather than consumer-protection-like, protection, as in the Anti-Dilution Act of 1995.[200]

The Net radically reduces the transaction costs involved in obtaining multiple quotes and offers. It makes possible software-based comparison shopping, and facilitates the acquisition of price/quality tradeoff information on a purchase-by-purchase rather than vendor-by-vendor basis. It allows for the development of services like CNET, that collect information, review it, make price comparisons, and link to vendors. While this may be good news for consumers and for aggregate social welfare, it is very bad news for the owners of famous brand names. The value of their brand names—premised on the happy accident that their social-welfare-increasing investments in saving consumers search costs also made competition more difficult from non-brand name producers, and hence gave them the ability to exercise some discipline on prices and quality—was undermined. The result of this destabilization is seen in the trademark/domain name debate.[201] (A fascinating subplot of the destabilizing effect of the dramatic reduction in search

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200. 15 U.S.C. § 1125(c) (Supp. IV 1998).

201. *See* ELECTRONIC COMMUNICATIONS, *supra* note 4, § 33A.2 (Supp. 1997); Jessica Litman, *Electronic Commerce and Free Speech* 19–26 (manuscript presented at Telecommunications Research Conference 1999) (visited Jan. 25, 2000) <http://www.law.wayne.edu/litman/papers/freespeech.pdf>.

costs on established models of market behavior is the occasional attempt in Congress to force certain participants to reveal their prices to consumers.[202])

B. Possible Approaches to Stabilization

1. Pornography and Dangerous Information

The primary destabilizing factor with respect to pornography or other dangerous materials was disintermediation—the elimination of intermediates as potential points to control the flow of information from producers to users. This makes possible three ideal-type outcomes to the destabilization. First, there is the possibility of extensive prohibition on the production or use of the disfavored materials, so as to capture one or both ends of the dangerous information flow that the Net enabled. This was more or less the approach of the CDA, and if the Court had taken to the Net something like its approach to television or even to cable access television,[203] then keeping this universally-accessible medium "clean" could have meant widespread prohibition on the production and use of dangerous materials like pornography. *Reno v. ACLU*[204] excluded that outcome as a normative choice—the justices thought the price in lost valuable communications too high. The opposite resolution would be the "anything goes" possibility. As communications occur increasingly between a willing recipient who seeks out information and a willing sender who makes it available, we could see an approach where all communication is treated as a "private" matter, outside the regulatory power of the state. What we already see, though, is what we will likely continue to see—an increasing focus on developing and legally requiring the use of various technical means of reintroducing a control point between producer and user, replacing the intermediary who once served that purpose. Whether it is a pervasively-

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202. *See* H.R. 2200, 106th Cong. (1999) (discussing airlines); H.R. 1030, 106th Cong. (1999); H.R. 1000, 106th Cong. (1999); H.R. 4742, 105th Cong. § 5 (1998); *see also* H.R. 1828, 106th Cong. § 119C(c) (1999) (authorizing Secretary of Energy to compile database of rates, terms and conditions of offered electricity services); S. 1047, 106th Cong. (1999) (discussing electric suppliers).

203. *See* Denver Area Ed. Telecomm. Consortium, Inc. v. FCC, 518 U.S. 727, 737–53 (1996).

204. 521 U.S. 844, 874–79 (1997).

filtered infrastructure or some other mechanism remains to be seen. The point here is to see the possibility of focusing the legal response on introducing a stabilizing institutional response at the point of destabilization, rather than at the point of production or reception of the information. The problem for policy analysis will be to try to evaluate the costs and benefits of one or another of these resolutions. This evaluation will depend on other possible ways in which information flows will or will not be controlled, given the destabilization of the patterns of control prevalent in the mass-mediated environment.

2. Consumer Privacy

The regulatory responses to the radical increase in surveillability of consumer transactions could range along a spectrum from doing nothing to prohibiting the collection of information. In the former case, which is largely the American response, consumers will likely be subject to pervasive surveillance by vendors. In the latter case, surveillance will be limited to organizations willing to work outside the law, and therefore will not be a pervasive fact of commercial interactions. This will also result in the lost utility of vendors being able to anticipate the preferences of consumers by extrapolating from profiles of past behavior.

In between, a variety of legal responses require more-or-less prominent notification and consent by consumers to the collection. Two possibilities are to require that the default option be permission to collect, or non-permission; or impose different levels of care in maintenance of the information, in keeping it updated, and in permitting consumers to update and challenge information kept about them.

At the technical level, the destabilization effect can be dampened by development of better anonymization technologies. One approach would be pervasive use of anonymizers[205]—services that strip a consumer's addressing and routing information from requests for information on the Web, and hence limit the capacity of vendors to collect information about visi-

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205. See A. Michael Froomkin, *Flood Control on the Information Ocean: Living With Anonymity, Digital Cash, and Distributed Databases*, 15 U. PITT J.L. & COM. 395 (1996), for the most influential, and inevitably aging, description of the relevant technologies.

tors to their sites without expressly asking for information. This would be impossible to implement, however, without a second component: widespread use of digital cash mechanisms—payment mechanisms that, like cash, are readily available and anonymous. With or without anonymizing utilities, the pervasive availability and use of digital cash would render unnecessary many of the current information collection practices necessary for implementing existing forms of electronic payment, like credit cards.

3. Encryption

The theoretically possible response to the destabilizing effect of strong, cheap processors on the balance of power between government agencies (or rich corporations) and non-governmental, small-scale users is to require the use of only weak encryption algorithms in consumer products. The theory is that if the public at large uses weak encryption, then the rapid rise in processing power will keep the decryptors ahead of the encryptors, much as they are in the pre-low-cost-processor world. This was the theory underlying the Clipper Chip initiative[206] and the United States' export restrictions on encryption technology. The alternative approach is not to regulate, in which case we will likely see widespread availability of very strong encryption. Its usefulness to electronic commerce and its embrace by users as a means to secure privacy suggest that, barring a prohibition, the market for strong encryption will drive its inclusion in popular applications intended for use in a networked environment very soon.

4. Digital Information Goods

The destabilization of patterns of control over information goods is bi-directional, in that it could lead to either much more control, or to much less control, of owners over information goods. The status quo was a contingent accommodation between the public interest in assuring incentives to producers and the public interest in assuring access to users, contingent upon the technological characteristics of available distribution media. Responses could therefore range along a wide spec-

206. *See generally* Froomkin, *supra* note 196.

trum. At one end, we could imagine very strong rights for owners to control uses of this information[207]—perhaps on a theory that declining transaction costs for contracting largely eliminate the need for most access privileges.[208] These would be supplemented by prohibitions on circumventing technological protection measures intended to extend the owners' capacity to monitor use and exclude non-paying users, and by strict enforcement of online contracts intended to mete out use rights and carefully price-and-quality discriminate among users.[209] At the other end, we could imagine very strong user privileges to take advantage of the new technology to access and use information, on a theory that in a near-zero marginal cost communications environment, the "goods"-based concept of information production—itself a zero marginal cost "good"—is no longer the appropriate way to think of how information is produced.[210] We could, in other words, see law as shifting away from protecting business models based on sales of products, and towards business models based on relationships built around information exchange.[211] Or we could see various approaches in between these two. What is unlikely to happen is that we will find a settlement more or less like the preceding settlement, because the relative costs of communication, reproduction, and use around which that settlement crystallized are so fundamentally altered by the new environment.

5. Trademarks and Domain Names

The concern over trademarks in domain names represents a destabilization of the value of trademarks as search-cost reducing mechanisms. One response could be an attempt to

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207. *See* ProCD, Inc. v. Zeidenberg, 86 F.3d 1447, 1452 (7th Cir. 1996); Frank H. Easterbrook, *Cyberspace Versus Property Law?*, 4 TEX. REV. L. & POL'Y 103 (1999).

208. *See* Robert P. Merges, *The End of Friction? Property Rights and Contract in the "Newtonian" World of On-Line Commerce*, 12 BERKELEY TECH. L.J. 115 (1997).

209. *See* William W. Fisher III, *Property and Contract on the Internet*, 73 CHI.-KENT L. REV. 1203 (1998).

210. See John Perry Barlow, *The Economy of Ideas*, WIRED 2.03 (1993) and Esther Dyson, *Intellectual Value*, WIRED 3.07 (1995), for versions of this position that were popularly expressed.

211. *See* Yochai Benkler, *Intellectual Property and the Organization of Information Production* (Oct. 1999) <http://www.law.nyu.edu/benklery/Ipec.PDF>.

transfer the value of trademarks from the high search cost bricks-and-mortar plus mass media environment to the low search cost digitally networked environment. The other approach would be to accept the declining importance of trademarks, to limit legal protection to situations where competitors try to use a mark to confuse consumers, and to abandon the notion of dilution as protection of goodwill, which developed to protect the famous marks most useful in the old environment. This would result in some decline in the importance and value of famous marks, and would instead increase the importance of search engines, rating services, and other methods of reducing search costs.

C. Regulatory Choices Made

1. Pornography and Dangerous Information

In the area of pornography, we see two general strategies adopted to attempt to stabilize the area of public sexual morality and children's exposure to sex. The first, identified in the CDA and COPA, is an attempt to ban or burden the introduction of sexual material at its source. CDA did so clumsily, and was therefore overturned with little difficulty. COPA has attempted to do so while crossing every "t" and dotting every "i" required by *Reno v. ACLU*. Functionally, however, their response is the same, and it is the response traditionally used in the area of broadcast. Both laws raise the costs of being a producer of sexual materials troubling to the majority, and place on producers the risk of error if they do make their materials available to the formally protected audience—children. Whether the more careful version of this approach taken in COPA will withstand First Amendment scrutiny remains to be seen.[212]

The other general approach is to foster and enhance the introduction of intermediaries between the end-user and the information producer. The most obvious instances of this are the repeated attempts to require libraries and schools to install fil-

212. *See* ACLU v. Reno, No. CIV.A.98-5591, 1998 WL 813423, at *5 (E.D. Pa. Nov. 23, 1998) (referring to the Nov. 19, 1998 restraining order).

tering software[213] and the attempts to encourage ISPs to offer, or even implement, filtering mechanisms.[214]

Of the two approaches, the latter seems, at first sight, to be more specifically responsive to the destabilizing factor—disintermediation—and to be less "speech restrictive," in that it does not entail prohibiting anyone from speaking. From a formal, nonfunctional First Amendment perspective, then, it is likely to receive a more robust response. It was Lessig, however, who noted that the relatively benign nature of filters may be illusory.[215] For one thing, intermediaries will be reintroduced not because of any necessity created by the technology, or because the medium requires a clearly defined editor. Intermediaries will be reintroduced solely to acquire their utility as censors of morally unpalatable materials. The laws effectively require libraries to take on the role of censors of what their users can see, rather than as facilitators of access to information their users seek.[216] Even more importantly, the introduction of filters and the pervasive tagging of information introduce the possibility that ISPs, employers, or, for that matter, governments less constrained than the United States government, will interject themselves between producers and users of information. A specific ban, or set of restrictions, on providers of sexual materials might have much narrower consequences for the information environment as a whole and would less likely

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213. *See* H.R. 3037, 106th Cong. (1999) (affecting schools and libraries receiving any federal funds); S. 1545, 106th Cong. (1999); H.R. 2560, 106th Cong. (1999) (affecting schools and libraries receiving any federal funds, not only universal service); H.R. 1501, 106th Cong. § 1402 (1999); H.R. 896, 106th Cong., (1999); H.R. 543, 106th Cong. (1999); S. 97, 106th Cong. (1999); H.R. 368, 106th Cong. (1999) (emphasizing local standard setting, instead of federal filtering guidelines); H.R. 4274, 105th Cong. § 601 (1998) (requiring filters be installed by all schools and libraries receiving federal funds); S. 1708, 105th Cong. (1998) (requiring recipients of funding to have policies restricting access to inappropriate materials); H.R. 3177, 105th Cong. § 2(a) (1998) (requiring all schools to install filtering or blocking mechanisms that prevent access to "material inappropriate for minors" as precondition to receiving universal service funds); S. 1619, 105th Cong. (1998) (conditioning universal service funds on installing filters in schools and libraries).

214. *See* Telecommunications Act of 1996, Pub. L. No. 104-104, § 509, 110 Stat. 56, 137–39 (codified as amended at 47 U.S.C. § 230 (Supp. III 1997)).

215. *See* LAWRENCE LESSIG, CODE AND OTHER LAWS OF CYBERSPACE 176–82 (1999).

216. *See* Elisabeth Werby, *The Cyber-Library: Legal and Policy Issues Facing Public Libraries in the High-Tech Era* (visited Feb. 29, 2000), *available at* <http://www.ncac.org/cyberlibrary.html>.

undercut the decentralized nature of the Net. It is unclear, however, that the rights-based analysis of the First Amendment would take account of the full impact of preferring pervasive filtering to direct burdens on sexual speech.

2. Consumer Privacy

Except in the case of children's privacy under COPPA, the American response to the consumer transactional privacy concern has generally been a do-nothing approach. Stating a preference for self-regulation, and contrary to the European response,[217] both the Administration[218] and Congress have refrained from regulating information collection practices. For example, Real Networks' practice of secretly collecting information about the listening habits of users who purchased their Real Jukebox product—including their habits of listening on their computer's CD-ROM drive, not over the Net using Real Jukebox[219]—may have been bad business,[220] but was not necessarily illegal.

It is difficult to tell what the consequence of this regulatory response will be. One option is that consumers will adjust their behavior patterns to life in this panopticon,[221] and try to make sure that they do not behave in ways that they would rather not be seen behaving. Another option is that a few well-publicized campaigns and failures of producers who collect too much information, like Real Networks with Real Jukebox, or

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217. *See* European Union Directive 95/46, 1995 O.J. (L 281/31) 213–38 (concerning the protection of individuals with regard to the processing of personal data and on the free movement of such data).

218. *See* United States, *Privacy and Electronic Commerce* (June 1998) <http://www.doc.gov/ecommerce/privacy.htm>.

219. *See* Sara Robinson, *CD Software Said to Gather Data on Users*, N.Y. TIMES, Nov. 1, 1999, at C1.

220. *See* Sara Robinson, *RealNetworks to Stop Collecting User Data*, N.Y. TIMES, Nov. 2, 1999, at C2.

221. A panopticon is a design for a penal institution, devised by Jeremy Bentham, where each cell is always within view of a guard post, but the guard is not viewable from the cell. This means that each inmate can always be observed, but can never know when he is being observed. The assumption is that the prisoner will always behave as though observed, cutting on the costs of actual monitoring to assure compliance with required prison conduct. It is a concept borrowed by Michel Foucault to describe the effects on social behavior of a social environment in which everyone watches everyone else.

like Lotus with Lotus Marketplace,[222] or like Lexis with the P-TRAK database,[223] will in fact result in some form of industry-based self-restraint, and the development of non-regulatory mechanisms to control privacy practices, like TRUSTe.[224] Almost certainly, however, in the absence of regulation, the digitally networked environment will be significantly more subject to surveillance than the analog environment—because it can be, and because the constraints will only be placed to reach a level just below the threshold of consumer rebellion, but no lower. Consumers will therefore likely be exposed to information chosen by vendors who guess what a user will want to see, based on past purchases reflected in a user profile. Advertising, as well as the content of news reports themselves, will be tailored by sites that a consumer visits based on past behavior. This would in effect be a modified "Daily Me"[225]—something like the "Daily Me as I am Perceived by Information Vendors." From a positive perspective, one might be uncertain whether this shift is welfare enhancing—giving individuals more relevant information at lower search and collection costs—or welfare reducing—limiting the ability of individuals to expose themselves to information relevant to them at the time, as opposed to information relevant to where they would have been had their preferences and interests followed a predictable path from past observable behavior. Largely this would depend on a combination of our sense of the linearity of the progression of people's preferences, and our evaluation of the quality of the models used by information vendors to predict future prefer-

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222. *See* Mary J. Culnan, *The Lessons of the Lotus MarketPlace: Implications for Consumer Privacy in the 1990's* (1991) <http://www.cpsr.org/ftp/cpsr/conferences/cfp91/papers/culnan>.

223. *See Lexis-Nexis: The P-TRAK Service* (visited Jan. 26, 2000) <http://www.epic.org/privacy/ssn/>.

224. *See The TRUSTe Program: How it Protects Your Privacy* (visited Jan. 26, 2000) <http://www.truste.org/users/users_how.html>. This site states:

> A cornerstone of our program is the TRUSTe "trustmark," an online branded seal that takes users directly to your privacy statement. The trustmark is awarded only to sites that adhere to our established privacy principles and agree to comply with ongoing TRUSTe oversight and our resolution process. Our privacy principles embody the core elements of fair information practices approved by the U.S. Department of Commerce, Federal Trade Commission, and prominent industry-represented organizations and associations.

Id.

225. *See* NICHALS NEGROPONTE, BEING DIGITAL 153 (1995).

ences, even if linear and in principle predictable. From the normative perspective, such a development undermines individual autonomy because it pervasively displaces personal control over the information environment within which individuals view the world, because the perception of the world and of possible options for action are defined by others.[226]

3. Encryption

In the area of encryption regulation, the cat seems to be well out of the bag. Encryption regulation within the United States has come to be seen as constitutionally suspect.[227] Export regulation has come to be seen as futile,[228] and even the Administration seems to have abandoned its central effort to prevent the spread of strong encryption.[229] Whether it is because of the ease of distribution, or because of the pressures from United States industry to prevent the Administration's efforts from simply shifting market share to foreign encryption producers, it seems that there is no longer any response other than to adjust law enforcement practices to a strong-encryption environment. This appears to be an instance where destabilization has gelled into a new equilibrium, technologically determined and autonomous of legal efforts to the contrary. Like talking about the weather, it is therefore difficult to draw normatively interesting conclusions from the encryption regulation debate. It does, however, suggest that there are in fact situations when technology and market forces simply defy regulation, as the techno-utopians of yesteryear foretold.[230]

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226. *See* Benkler, *supra* note 199; *see also* Yochai Benkler, *Siren Songs and Amish Children, Autonomy, Information, and Law* (unpublished manuscript, on file with author).

227. *See* Bernstein v. United States, 176 F.3d 1132 (9th Cir. 1999), *withdrawn, en banc reh'g granted*, 192 F.3d 1308 (9th Cir. 1999).

228. For an archive of the debate, see EPIC, *Recent Crypto News and Documents* (last modified Nov. 24, 1999) <http://www.epic.org/crypto/>.

229. *See* United States Dep't of Commerce, *Commerce Announces Streamlined Encryption Export Regulations* (last modified Jan. 14, 2000) <http://204.193.246.62/public.nsf/docs/60D6B47456BB389F852568640078B6C0>.

230. *See* John Perry Barlow, *A Cyberspace Independence Declaration* (Feb. 9, 1996) <http://www.eff.org/pub/Misc/Publications/John_Perry_Barlow/barlow_0296.declaration>.

4. Digital Information Goods

In stabilizing control over digital information goods, the regulatory response has been fairly consistent, and it has consistently been on the side of expanding the power of the owners to control the use of their products. The DMCA criminalized circumvention of technological protection measures[231] and the provision of any services or products capable of circumventing technological protection measures.[232] This likely will lead to pervasive installation of technological locks, which will have the effect of prohibiting all uses not expressly permitted and enabled, because any uses—legally privileged or otherwise—require access through the code. This extension dovetails with the DMCA's conditional exemption from liability for ISPs.[233] The DMCA includes a series of exemptions for ISPs from contributory liability for various infringement actions,[234] in exchange for a requirement that ISPs enforce copyright claims made by owners under a "notice and take down" framework. That framework, in effect, operates as a private temporary restraining order, pending resolution in court.[235] If the states also adopt the proposed Uniform Computer Information Transactions Act ("UCITA")[236]—the law formerly known as UCC-2B[237]—which, among other things, validates mass market li-

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231. *See* 17 U.S.C. § 1201(a) (Supp. IV 1998).

232. *See id.* § 1201(b).

233. *See id.* § 512.

234. *See id.* § 512(c)–(d). These provisions are highly controversial extensions of contemporary copyright law—like the notion that linking or searching are suspect under copyright law.

235. The notice and take down structure frees an ISP of contributory liability if it has no knowledge of infringement. If it is notified of infringing materials, it must take them down if it stores them, or block access to them to enforce the claim, unless it receives a court order to the contrary. *See id.*

236. For the most recent version, see National Conference of Commissioners on Uniform State Law Laws ("NCCUSL"), *Drafts of Uniform and Model Acts* (last modified Feb. 24, 2000) <http://www.law.upenn.edu/bll/ulc/ulc_frame.htm>.

237. For last draft before the ALI abandoned the project, see NCCUSL, *Uniform Commercial Code Article 2B: Computer Information Transactions* (Feb. 1, 1999) <http://www.law.upenn.edu/bll/ulc/ucc2b/2b299.htm>. For the joint statement, which removed the article from the UCC and left it in the uniform laws only, see NCCUSL, *NCCUSL to Promulgate Freestanding Uniform Computer Information Transactions Act: ALI and NCCUSL Announce that Legal Rules for Computer Information Will Not Be Part of UCC* (Apr. 7, 1999) <http://www.nccusl.org/pressrel/2brel.html>.

censes,[238] then we will likely see the displacement of copyright and related laws by private regulation, achieved by a combination of contract, code, and organizational enforcement.

Whether an environment of near-perfect excludability of information goods—which are true public goods in the sense of being non-rival—is a good idea as a matter of positive analysis is as questionable as would be the efficiency of a perpetual patent right. Whether it is an environment that is normatively appealing is even more questionable. In such an environment, a relatively small number of organizations control increasing portions of our information environment, and their control extends to an increasingly fine-grained degree of how each of us uses and interacts with our information environment.[239] What is important to see in this context is that, in the area of digital information goods, the regulatory response seems quite systematically to choose one of the two extreme ends of the possible approaches to resolving the destabilization created by the technology. The political economy of this preference for the outcome preferred by those who see the direct effects of the laws as private benefits—the copyright owners—and not the outcome preferred by those who do not see most of the costs of this choice as private costs—users and future producers—is not particularly mysterious.[240] Building an institutional counterweight to this political imbalance would require courts to take on a more active role of constitutional review of intellectual property regulation.[241]

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238. Whether these would be valid otherwise is controversial. See Mark A. Lemley, *Intellectual Property and Shrinkwrap Licenses*, 68 S. CAL. L. REV. 1239, 1248–53 (1995), which reviewed the general reluctance of courts to enforce shrinkwrap licenses before 1996. This position has been under pressure since the decision of the Seventh Circuit to enforce such licenses in *ProCD, Inc. v. Zeidenberg*, 86 F.3d 1447 (7th Cir. 1996).

239. *See* Benkler, *supra* note 199, at 394–412; *see also* Yochai Benkler, *The Free Republic Problem: Markets in Information Goods vs. The Marketplace of Ideas* (visited Feb. 24, 2000) <http://webserver.law.yale.edu/censor/benkler.htm>.

240. *See* Yochai Benkler, *Constitutional Bounds of Database Protection: The Role of Judicial Review in the Definition of Private Rights in Information*, 15 BERKELEY TECH. L.J. (forthcoming Apr. 2000).

241. *See id. See generally* Benkler, *supra* note 199.

5. Trademarks and Domain Names

The resolution of the destabilization of trademarks has gone in the direction of trying to maintain the value of brand names at the expense of the efficiency of electronic commerce. Whether this position is the (relatively) more moderate approach taken in the Internet Corporation for Assigned Names and Numbers ("ICANN") rules,[242] or the more aggressive approach taken by Congress,[243] the basic approach has been to do the following three things. First, the resolution assumes that consumers will seek out products on the Net by taking their knowledge base from the mass-mediated environment and deciding that the way to acquire the most appropriate product given the consumer's preferred price, quality, and terms is to seek a recognizable brand name from the mass media environment to fit that preference, rather than to go to a search engine or a product review site. Second, it assumes that this reliance on an existing knowledge base will be translated into a consumer typing into their browser a uniform resource locator ("URL") such as http://www.brandname.com as their primary way to access products. Third, it gives owners of trademarks the power to control the use of the alphanumeric string that is a part of their trademark as a second level domain name, the place represented by "brandname" in our example.

It is not clear, however, that this resolution will be effective. It assumes that browsers will continue to be as they are, that search-and-compare shopping software and review services will continue to play second fiddle to brand recognition, along with a variety of other technological and market assumptions that may or may not turn out to be true. But what is important here is to see that the regulatory effort identified an opportunity to negate the destabilizing effect, and secured it for the stakeholders prior to the destabilizing event. In this case, if consumers, rather than going to a search engine, shopping software, or review site, hunt around for http://www.brandname.com, or http://www.brand-name.com, or http://www.brandname.net, then they continue to depend on their

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242. *See* ICANN, *Uniform Domain Name Dispute Resolution Policy (As Approved by ICANN on October 24, 1999)* (last modified Jan. 3, 2000) <http://www.icann.org/udrp/udrp-policy-24oct99.htm>.

243. *See* Anticybersquatting Consumer Protection Act, Pub. L. No. 106-113, § 3001, 1999 U.S.C.C.A.N. (113 Stat.) 1501.

relatively limited ability to remember brand names, and the investments made in building name recognition to capture consumers is not lost. To make this possible, it is absolutely necessary that this way of seeking information be a viable approach to searching at least for those branded products, and for that purpose the control of brand-name owners on the second level domain space must be more or less complete. It also suggests, as we in fact see in early 2000, resistance on the part of brand name owners to an expansion of the generic top level domain ("gTLD") space.[244] The very strong dilution/goodwill, rather than confusion-based, protection offered in many of the cases,[245] the Act, and the ICANN policy is consistent with the attempt to transfer the value of brand names from the real-space, mass-mediated environment to the digital environment. This is the appropriate regulatory means to maximize the probability that this outcome will obtain in the market.

Whether it is in fact sensible—as a matter of social policy—to saddle electronic commerce with the baggage of an imperfect approach to saving search costs from the mass-mediated, real-world environment is a different question. The private stakes for those corporations who have invested in building brand recognition and plan to recoup their investments by exercising some price discipline using the value of their brand name as a search-cost saving device for consumers are obvious. The public benefits of protecting these costs by encouraging consumers not to take advantage of the reduced search costs in the electronic commerce environment are more questionable. But the methodological point is the important one for this article. This is an instance in which the policy choice was to counteract the destabilizing effect of the reduction in search costs associated with electronic commerce and the solution is in fact appropriate to provide at least the legal infrastructure necessary to permit people to engage in electronic commerce without taking advantage of its reduced

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244. The point is that if the object of trademark protection is to maintain the utility of brand names to capture consumers, then a proliferation of gTLDs will both limit the utility of the hunt-and-peck approach to e-commerce, and will increase opportunities for non-confusing, possibly non-infringing uses of an alphanumeric string similar to a trademark as a second level domain name. This would limit the utility of a trademark to exclude unknown competitors.

245. *See, e.g.*, Panavision Int'l, L.P. v. Toeppen, 945 F. Supp. 1296, 1303 (C.D. Cal. 1996), *aff'd*, 141 F.3d 1316 (9th Cir. 1998).

search costs, relying instead on the real-world, mass media stand-in for actual comparison—brand name recognition.

D. Regulation as Stabilization Revisited

The above-described type of internet regulation cuts across many substantive legal areas, and concerns instances in which the internet has destabilized existing modes of controlling information. Some combination of technology, law, and economic organization provided, in the pre-Net environment, a certain stable pattern of control over information. Broadcasters could keep the main public medium "clean"—walls, drawers, and cash created a sphere of privacy. Moving to the digitally networked environment destabilized the particular relationships of control over information flow, and someone found this destabilization worrisome enough to try to use law to re-stabilize control.

What this Part suggests is that, when faced with such laws, we begin not with the itch but with an analysis of its causes. We should look at what it is about the digitally networked environment that destabilized the relations of control over information. Once we know the cause of the concern, we can begin to imagine fixes, and we can begin to imagine the kinds of dynamic effects that different kinds of fixes will have. Only then can we make a rational normative choice among possible responses. Only then can we assess which approach would best respond to the concern without imposing too high a cost in terms of how we use information more generally.

CONCLUSION

A review of the legislative activity in the area of Net regulation throughout the 1990s reveals three general types of regulatory activities. The first involves harnessing the Net to enhance fulfillment of traditional government roles, like providing education or facilitating democratic participation. In some cases, the utilization of the technology may do nothing more than make more efficient that which already is. In others, it may actually affect the nature of the government function, as one might hope or suggest would be the case with significant enhancement of opportunities for citizen response and input into government processes. The second type of regula-

tory activity involves direct efforts to enhance the deployment and development of the Net itself. These efforts include investments in intellectual and physical infrastructure, and regulation of markets that will serve this development. Again, this is a regulatory area that may have normatively significant effects. Different approaches to more-or-less regulation and more-or-less direct provision by the government may have significant effects on the way the network is built and used in the future.

Finally, there is a set of regulatory activities that are more commonly identified with the concept "Net regulation," which have to do with regulating control over information flows. This article suggested that these areas are amenable to a common analytic approach. Using this mode of analysis may, for example, reveal the stakes of the regulation more effectively than treating the problems as separate, specific problems of regulation of pornography or copyright infringement.

The way to approach these questions of Net regulation is to ask, first and foremost, whether they are issues of "Net regulation." The way to answer this question is to analyze in what way, if at all, the perceived regulatory problem is a result of the destabilization of extant models of control over information flows in the pre-digital environment. If the regulatory problem is not affected by the fact that the activity sought to be regulated is on the Net, rather than in the real-world or mass-mediated environment, then it is not clear that any new, Net-specific regulatory solution is necessary. If, however, it is possible to identify the Net as a factor that destabilizes the structure of control over the information flows sought to be regulated, then we might indeed be facing a situation that requires a regulatory response to resolve the question of control that has been set loose from its pre-digital moorings.

The second step is to identify how the Net destabilizes the incumbent structures of control over information flows. In particular, we should seek to identify who once had control, and no longer does, or who once had no control, which they might now have, and what it is about digital network communications that caused this shift. This may be a unidirectional effect, as in the case of encryption, or a bi-directional effect, as in the case of digitized information goods. But the methodological inquiry is the same.

The third step is to identify the range of possible regulatory responses that, given the new technological context, could stabilize new patterns of control over information. Different regulatory responses could result in different patterns of control, and we must consider the various possible responses and outcomes in order to settle on a considered regulatory approach.

The fourth and final step is normative evaluation. Understanding something as a problem of Net regulation; understanding the ways in which law can re-stabilize new patterns of control over information flow; and understanding who stands to gain and who stands to lose what types of control over which kind of information given adoption of the various regulatory responses possible, set the groundwork for choosing the appropriate regulatory response. That choice, however, is irreducibly normative. And it is a choice of great moment, for it sets the legal framework for the new settlement in the digital environment of some very basic social and cultural questions. These are the questions of who gets to say what to whom, and who decides; who gets to produce culture; and how concentrated or widely distributed our social, political, and cultural conversations will be.

Together, recognition of the different layers of Net regulation and their possible interactions with each other is a necessary pre-condition to developing a coherent policy about Net regulation. We must understand that we make Net policy at all these layers—its utilization for the provision of public goods, its infrastructural development, and its effects on the structures our society uses to control the flow of information—and that the choices we make interact across clusters and within clusters among specific choices. If we embrace the Net as a medium enabling widely dispersed, robust public discourse,[246] then it makes little sense to negate that normative choice by creating new tight controls over cultural production in the form of expanded property rights to information goods. If we embrace extensive monitoring of uses of information so as to permit owners to charge for every use, then we cannot also

246. *See, e.g.*, Reno v. ACLU, 521 U.S. 844 (1997). "Through the use of Web pages, mail exploders, and newsgroups, the same individual can become a pamphleteer. As the District Court found, 'the content on the internet is as diverse as human thought.'" *Id.* at 870 (quoting ACLU v. Reno, 929 F. Supp. 824, 842 (E.D. Pa. 1996)).

embrace a very strong perception of privacy.[247] As we are bombarded with specific policy choices, we will make better policy by stepping back and understanding where the choice is situated in the map of policy choices we have already made and are likely to make, comprehending the positive implications of our choices given the technological backdrop and the change that it has created from our former environment, and explicitly assessing the normative value of these implications.

247. *See, e.g.*, sources cited *supra* note 195.