Notes

Preface

5. Fung et al., 2004; Weil et al., 2006.

Chapter 1. Governance by Transparency


21. Other trends may also support the growing impact of targeted transparency as mainstream policy, though their influence is harder to document. For example, as consumer choices are multiplying and brand loyalty is decreasing, it makes sense that increasingly well-educated consumers would demand better factual information on which to base more complex decisions.

22. See, for example, Evans and Wurster, 1997, p. 74.


25. Some, but not all, transparency policies will benefit from future leaps in information technology, depending upon when and where users need information to make their decisions. For example, for many customers, the provision of crashworthiness ratings directly on new-car stickers may provide all the information they need for their purchase decisions. These consumers would gain little from technological enrichment via the Internet.

26. Over the last three decades, the public’s confidence in policymakers has plum- meted. Polled in 1966, about 40% of respondents indicated that they had “a great deal” of confidence in leaders of the executive branch and Congress. Twelve years later, in 1978, only 14% expressed such confidence in the executive branch and 9% in Congress. Confidence rose to 20% for Congress and 17% for the executive branch in 1988 but fell once again to around 14% for both institutions by 1996. These results are taken from Nye, Zelikow, and King, 1997, p. 207.

Chapter 2. An Unlikely Policy Innovation

1. We discuss in depth the obstacles to transparency in Chapters 4 and 5.

2. The procedure for conducting the search for final federal regulations was as follows. We searched the online Federal Register database for the period January 1, 1996, to December 31, 2005, using the nine keywords/phrases that are most associated with the use of information disclosure in regulations: labeling and warning, information disclosure, labeling and disclosure, mandatory disclosure, voluntary disclosure, hazard information, transparency, right-to-know, and report card. To avoid double counting and focus only on regulations that actually were promulgated, we narrowed our initial search to interim rules or final rules; search results related to notices, proposed rules, or any other return that did not explicitly result in an interim or final rule were not counted. Using this search procedure, a total of 3,502 cases were identified using the nine general search terms. We then reviewed the resulting set of rules, eliminating those that (1) did not represent final rules; (2) did not fit our specific definition of targeted transparency (e.g., disclosures that are intended only to provide the public with information on administrative processes, or disclosure laws that are solely forms of public warnings); (3) represented final rules that had only a minor disclosure component (e.g., a small disclosure requirement that was wedded to a more conventional standard-based regulation); or (4) represented final rules that provided information solely to the government as a means to sharpen enforcement efforts. Thus, our tally of 133 policies includes only those final rules whose central regulatory mechanism was information disclosure.
following are our year-by-year tabulations of final targeted transparency rules from the survey:

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Information about specific final regulations that make up the survey is available on request from the authors.

17. For an account of these events, see Graham, 2002b, p. 38.
24. For a detailed account of the development of the disclosure system for toxic pollution, see Graham, 2002a, pp. 21–61.
27. The classic presentation of this view can be found in Hayek, 1945, pp. 519–530.
28. Stiglitz, 2000, provides a complete but readable overview of this literature.
29. The work of Mancur Olson famously shows that private parties, even with coordinated activities, have difficulty overcoming the problem of providing public goods like information. See Olson, 1971.
32. See March and Simon, 1958, for the classic discussion of bounded rationality in organizations.
34. Fischoff, 2002.
35. Cass Sunstein and others call this cognitive outcome “probability neglect” (see Sunstein, 2005). See, for example, Rottenstreich and Hsee, 2001, pp. 185–188.
37. For example, see Thaler, 1991.

Chapter 3. Designing Transparency Policies

1. This early history is drawn from Commons and Andrews, 1916 (quotation from p. 158).
4. See, for example, Viscusi, 1979, pp. 134–143, in regard to the voluntary incentives for providing information on workplace hazards.
5. See, for example, Zeckhauser and Marks, 1996, pp. 32–34.
7. Upon voting to issue implementation instructions for the act in February 1995, Ann Brown, chairman of the Consumer Product Safety Commission, noted: “The CSPA and the toy labeling regulation approved by the Commission assure uniform, consistent, prominent and conspicuous warning labels on certain toys and games, marbles, balloons, and balls intended for children at least 3 but under 6 years. These warning labels will provide parents and others who purchase marbles, balls, balloons, and toys and games containing small parts for children 3 years and older, with information, at the point of purchase, that informs them of the risk of choking or suffocation that these products present to children under the age of three years.” Press Release, Statement of Chairman Ann Brown, Toy Labeling and Choking, February 15, 1995, http://mbd2.com/Arianes/95083.htm (site accessed April 29, 2006).
8. Gormley and Weimer, who have extensively studied organizational report cards, define them as “a regular effort by an organization to collect data on two or more other organizations, transform the data into information relevant to assessing performance, and transmit the information to some audience external to the organizations themselves.” Gormley and Weimer, 1999, p. 3 (emphasis in original).
9. The classic description of the link between public goods and location is Tiebout, 1956.
10. See Ehrenberg and Jakubson, 1990, for a discussion of the problems arising from voluntary disclosure of plant closing decisions.
11. See Graham, 2002a, pp. 31–35, for a discussion of these exemptions.
12. In September 2005, the federal EPA proposed three changes, each of which would dramatically cut information available to the public on toxic pollution. The agency proposed that it (1) reduce annual reporting to every other year; (2) allow companies to release ten times as much pollution before being required...
to report the details of how much toxic pollution was produced and where it went; and (3) permit facilities to withhold information on low-level production of persistent bio-accumulative toxins (PBTs), including lead and mercury, which are dangerous even in very small quantities because they are toxic, persist in the environment, and build up in people's bodies. Toxics Release Inventory Burden Reduction, 70 Fed. Reg. 57822 (proposed October 4, 2005) (to be codified at 40 C.F.R. pt. 372). See also Mark Hammond, “EPA Update,” GATF World, February 1, 2006, 18(1), 2006 WLNR 4533381 (noting that the exemptions could benefit the printing industry); Bruce Geiselman, “States Ask EPA to Reconsider TRI Changes,” Waste News, January 31, 2006, 11(21), 14 (stating that the National Association of Manufacturers endorsed the Bush administration’s proposals).


14. In particular, finding a group to deal with the public goods nature of information collection and interpretation raises a classic “collective action” problem where no parties capture all of the benefits of acting as agents and all parties therefore have lowered incentives to play those roles (Olson, 1971).

15. Some analysts (e.g., Coglianese and Nash, 2004) have argued that this represents one of the principal benefits of toxic release reporting and related interventions: if firms are forced to recognize for the first time the amount of pollutants they have been discharging, managers are more likely to find ways to reduce those releases than if the releases go unmeasured.

16. De Marchi and Hamilton, 2006, find considerable differences in reported levels of chemical release reductions for two major chemicals, lead and benzene, when comparing toxic release reports from the disclosure system and EPA direct monitoring data. They show that while disclosure reports indicated that average air emissions of benzene fell by 84% between 1988–1990 and 1998–2000, actual EPA monitoring data indicated reductions of only 56%. Similarly, disclosure reports indicated reductions of 45% in air emissions of lead versus 24% based on EPA monitoring data over the same period. The study found smaller discrepancies between disclosure-based and EPA monitoring data for three other chemicals. See De Marchi and Hamilton, 2006, Table 1 and pp. 63–65.

17. Schwartz, 2004, Chapter 3, has a useful overview of the cognitive literature regarding choosing and making decisions.

18. These findings are reported in Degeorge, Patel, and Zeckhauser, 1999.


21. Under the disclosure law in Washington State, for example, failing to register or maintain an accurate record of current location is a class C felony if the original crime for which the individual was convicted was a felony sex offense or, if other than a felony conviction, a gross misdemeanor. Wash. Rev. Code Ann. §9A.44.130(10)(a),(b).

22. Hamilton reports that the EPA increased the number of inspections in the years immediately following passage of the law in 1987, going from 153 in 1988 to 768 in 1989. Inspections remained relatively high under the elder Bush administration and only began to fall in the mid-1990s as the Clinton administration faced increasing congressional opposition to regulatory policies. On the general issue of enforcement under the toxic releases act, see Hamilton, 2005, pp. 191–198.

23. De Marchi and Hamilton’s 2006 estimate of the gap between reported and actual air emissions of toxic chemicals is an example of this problem.


25. The number of full-time equivalent staff increased from 290 in FY 2001 to 384 in the Bush administration’s proposed FY 2006 budget. Similarly, overall funding rose from $30.5 million in FY 2001 to $48.8 million in its proposed FY 2006 budget. This increase contrasted with budget reductions in the many other programs administered by the department. See Office of Management and Budget, Executive Office of the President, Budget of the United States Government, Fiscal Year 2001 (2000), and Office of Management and Budget, Executive Office of the President, Budget of the United States Government, Fiscal Year 2006 (2005).


27. For example, Coglianese, Nash, and Olmstead, 2003, and Stavins, 2004, see the data provided by many disclosure-based systems as important inputs for market- or incentive-based approaches, but not a separate class of regulatory tools. Gunningham and Grabosky, 1998, Chapter 2, describe information instruments as a counterpart to education-based regulatory instruments.


30. See Becker, 1968, for a discussion of how the probabilities of detection and penalty translate into an economic calculus regarding whether or not to comply with laws.


Chapter 4. What Makes Transparency Work?

3. The full list of eighteen targeted transparency policies and an overview of each can be found in Chapter 1, Table 1.1. The Appendix provides a detailed description of the legislative history, purpose, provisions, and dynamics of each policy.
4. Because relatively few researchers have recognized the need to evaluate transparency policies rigorously, the available literature on which we draw is quite variable. Some researchers have undertaken direct analyses of specific user and/or discloser responses to new information. Others have focused on one step in the action cycle, such as discloser compliance with information requirements, user understanding of new information, or responses by investors, consumers, or others. The relative paucity of studies of some important transparency systems indicates the continuing prevalence of the assumption that such systems always produce net benefits.
6. The action cycle helps place in context research on the impact of organizational report cards (Gormley and Weimer, 1999), as well as related research on regulation through information disclosure (for example, Sunstein, 1993; Klein-dorfer and Orts, 1998; Mitchell, 1998; Tietenberg, 1998; Sage, 1999). Gormley and Weimer focus on the validity of report card metrics and the accessibility of that information to users. Their evaluative criteria pertain to the utility of report cards to users (based on characteristics such as relevance and comprehensibility) and disclosers (particularly regarding report card functionality).
contrast, our approach focuses on users and disclosers (rather than information itself) and how disclosed information and resulting behavioral responses fit into their decision-making processes. We therefore place a greater emphasis on the context – for example, what does the user want, what are his/her choices and options, what are the costs of gaining the information? – than upon the construction of the report card per se. A related idea is described in Zeckhauser and Marks, 1996, who refer to the interaction of users and disclosers as the consumer and manufacturer effect: “Consumers increase their demand for products possessing the newly posted characteristic and sellers increase their production of such products” (p. 33).

7. Simon, 1997, is the seminal treatment of this issue. See also Payne, Bettman, and Johnson, 1993, for a full discussion of information seeking and its impact on decision making.

8. The ability of companies and organizations to shape preferences is the subject of a rich theoretical and empirical literature. See, for example, Carpenter and Nakamoto, 1989, and Mantel and Kardes, 1999.


11. The literature indicates that socioeconomic and educational factors affect user comprehension of disclosed information. For example, education and income affect users’ comprehension of nutritional labeling (Mathios, 2000; Derby and Levy, 2001), workplace hazards (Occupational Safety and Health Administration, 1991; Kolp et al., 1993), and patient safety (Mukamel et al., 2004).

12. Occupational Safety and Health Administration, 1997; see also Kolp et al., 1993; Phillips et al., 1999.


14. See, for example, Hammit and Graham, 1999.


16. The stated purpose of the advisory system is to “inform and facilitate decisions appropriate to different levels of government and to private citizens at home and at work.” Homeland Security Presidential Directive 3 (HSPD-3), March 12, 2002, as amended by Homeland Security Presidential Directive 5 (HSPD-5), February 28, 2003. The system arguably provides more useful information to federal, state, and local government officials than to ordinary citizens because each threat level is intended to trigger threat-specific protective measures by governments.


19. See, for example, Scorecard.org, rtknet.org, and envirofacts.gov.


22. The National Community Reinvestment Coalition, for example, represents local community reinvestment organizations that try to attract capital to underserved communities. See http://www.ncrc.org (site accessed February 16, 2006).


26. Fisher, Raman, and McClelland, 2000. Even highly motivated retailers that have long used sophisticated analyses of point-of-sale information, such as Wal-Mart or Best Buy, have had difficulty until very recently in determining whether changes in sales arise from pricing, advertising, or specific product characteristics. New retail forecasting software and the falling costs of computing have made more subtle analysis of trends feasible.


28. For example, Stephen Marshall, a Maine resident, tracked down and killed two registered sex offenders (and then took his own life). One had been convicted of raping a child and the other of sex with a minor (when he was nineteen and his girlfriend was fifteen). Marshall had looked up details about the two victims as well as thirty-two other listed offenders on the state’s online registry prior to his attack. See Libby Lewis, “Murders Put Focus on Sex-Offender Registry Policies,” *All Things Considered* (National Public Radio), broadcast April 21, 2006; John Ellement and Suzanne Smalley, “Sex Crime Disclosure Questioned,” *Boston Globe*, April 18, 2006, p. A1.


33. Graham, 2002a, pp. 40–45. Regarding the choice of metrics under toxic pollution reporting, see Hamilton, 2005, Chapter 2. More generally, see Hamilton and Viscusi, 1999, regarding the choice of metrics used to inform the public about environmental risks.


35. The capacity to undertake such ongoing improvement will, in turn, be affected by the factors related to sustainability discussed in Chapter 5.

36. For research questioning the need for mandatory information disclosure, see Stigler, 1964; Benston, 1973.


39. For a discussion on financial disclosure and the cost of capital, see Botosan, 1997. Lang and Lundholm, 1996, analyze how more informative disclosure policies decrease dispersion among analysts’ forecasts.
42. Gelos and Wei, 2002.
43. Fielding et al., 1999.
47. Simon et al., 2005.
50. Bostic et al., 2002.
63. Patten, 2002.
68. Phillips et al., 1999.
72. For reasons we describe, some studies suggest that New York’s system is moderately effective.
76. Schneider and Epstein, 1996.
Chapter 5. What Makes Transparency Sustainable?

3. Homer Kripke concluded: “Accounting was Congress’ most important charge to the [SEC] and represented the Commission’s greatest opportunity to be of use to the investor . . . and it is the one problem which the SEC chose to turn over to the technicians while it sat on its own hands for 40 years.” Kripke, 1985, p. 62. See also Previts and Merino, 1998, pp. 271–276.
6. Commission chairman Arthur Levitt emphasized the importance of constant vigilance to produce clear and accurate information. Without continual oversight, “the competitive juices of corporate America are such that they will stay close to the line, and some of them will go over the line.” Levitt is quoted in Floyd Norris, “Levitt to Leave SEC Early; Bush to Pick 4,” *New York Times*, December 21, 2000, p. C1.
9. Institute of Medicine, 1990, pp. 90–91 and 144–150.
10. See, for example, http://www.leapfrog.org.
11. This account is drawn from a longer case study in Graham, 2002a.
12. For example, Ida Ballasiotes, the mother of a slain businesswoman, began a grassroots citizen campaign to reform Washington State’s laws on sex offenders. Along with the mother of another victim of crime by an ex-offender and organizations such as “Friends of Diane” and “Tennis Shoe Brigade,” she marched on the state capitol and dumped thousands of tennis shoes to represent the vulnerability of children, women, and elders. Dorsett, 1998 (citing Barry Siegel, “Locking Up Sexual Predators,” *Los Angeles Times*, May 10, 1990, p. A30).


18. 1999 1st special session, ch. 6, §6(a) (codified at Wash. Rev. Code Ann. 9A.144.130(6)(c)).


20. Under the revised law, if an ex-offender obtains employment in either a public or a private institution of higher education, the ex-offender must, either within ten days of accepting the employment or by the first day of work at the institution, whichever is earlier, notify the sheriff of the county of the ex-offender’s residence of his/her employment at the higher education institution. If the ex-offender’s position at the same institution is terminated, the ex-offender must within ten days notify the sheriff of his/her residence of such termination. Law 2003 ch. 215, §1.

21. The sheriff is then required to notify the principal of the school, who is then required to notify various personnel at the school depending on the student’s classification as a Level I, II, or III sex offender. Law 2005, ch. 380, §1. The 2005 law became effective September 1, 2006.

22. All fifty states currently have sex offender registration laws, and many of these laws require community notification. The most recent sex offender law was passed in Tennessee in 2004. Tennessee Sexual Offender and Violent Sex Offender Registration, Verification and Trading Act of 2004, T.C.A. §40-39–201 et seq.


24. Concern about union finance reporting violating union officers’ Fifth Amendment rights under the U.S. Constitution is discussed in Robb, 1961. The need for more detailed disclosure as a curb against corrupt practices by union officers (such as kickbacks or other forms of illegal payments from unions to other parties) is discussed in Goldwater, 1961. A more pessimistic view from the time concerning the prospects for improving internal union democracy through government intervention can be found in Petro, 1959.

25. See Labor Organization Annual Financial Reports, 68 Fed. Reg. 58374 (October 9, 2003) (to be codified at 29 C.F.R. pts. 403, 408). A similar executive order had been issued by George H. W. Bush at the close of his presidency, but the order was rescinded in the early days of the Clinton administration. See Exec. Order No. 12,800, 57 Fed. Reg. 12985 (April 13, 1992), as corrected 57 Fed. Reg. 13413
For example, Ken Paff, the national organizer of the dissident Teamsters for a Democratic Union and a long-time advocate of union member rights, noted that although he looked forward to learning how much Teamsters president James Hoffa paid the union’s law firm via information provided by the expanded disclosure regulations, he worried that the new requirements would pose significant burdens on small union locals: “The bulk of these forms are filed by local folks. . . . It’s an enormous hassle for a small workers’ organization. That’s where the harassment is very serious.” Jane M. Von Bergen, “Unions Adjust to Stricter Oversight,” Philadelphia Inquirer, December 11, 2005.

Bergen, “Unions Adjust to Stricter Oversight.” Bergen notes that the Department of Labor opened the new Division of International Union Audits in 2004 to review the information provided with the new reporting requirements.


34. For a theoretical discussion of interest group politics, see Becker, 1983.

35. Wilson, 1980; Becker, 1983. Cunningham and Grabosky, 1998, pp. 94–122, have an extensive discussion of intermediaries under a variety of environmental policies.


40. The role of unions and other workplace agents in dealing with the public goods aspects of regulation is discussed in Weil, 2005.

41. Freeman and Medoff, 1983.

42. For a recent discussion of this problem, see Gene Koretz, “Stock Analysts Shun Bad News; Good Reports Appear More Quickly,” Business Week, May 11, 1998, p. 24 (stating that an adviser or analyst might be less likely to give bad news about a fund when it may possibly hurt its relationship with a client or potential client); see also Bodie and Clowes, 2003; Scherbina, 2005; and Shapiro, 2005.


45. Kane and Staiger, 2002.


Chapter 6. International Transparency

1. Transparency International (http://www.transparency.org) has constructed a respected system aimed at reducing public corruption. The Sustainable Forestry Initiative (http://www.sfi.org) represents a relatively mature private-sector effort to improve environmental protection. The Global Reporting Initiative
(http://www.globalreporting.org) is a broader effort to develop voluntary corporate reporting standards for environmental protection, human rights, labor practices, and other goals.

2. For example, the 1979 Convention on Long-Range Transboundary Air Pollution required that parties report their SO$_2$ emissions as a step toward framing and enforcing agreements to reduce acid rain. The Barcelona Convention for Protection of the Mediterranean in 1976 required standardized monitoring of specific pollutants as a prelude to multinational pollution regulation in 1980. During the Cold War, members of NATO and the Warsaw Pact agreed to inform each other of major military exercises near the East-West border to reduce the likelihood that forces would be deployed. And parties to the Nuclear Non-proliferation Treaty agreed to inspections of the equipment and materials they used in their peaceful nuclear programs in order to provide assurance that none was used for weapons.


7. Wolfgang Reinicke has explored the influence of globalization on national and international public policy in Reinicke, 1998. For a discussion of impacts on national regulation, see, for example, pp. 65–68.


14. IMF Balance of Payments Statistics, September 2003. The proportion of total financial liabilities going to twenty-one industrialized countries was 86.5% over the period 1978–1985; 91.7% over 1986–1993; and 90.3% over 1994–2001. The same figures for portfolio investment were 96.3%, 92.3%, and 92.8%. Emerging market countries received 11.5%, 7.7%, 8.7%, and 4.3%, 7.6%, and 6.3%, respectively. The twenty-one industrialized countries are Australia, Austria, Canada, Denmark, Finland, France, Germany, Great Britain, Greece, Iceland, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, and the United States. The seventeen emerging market countries in our data are Argentina, Brazil, Chile, China, Colombia, Indonesia, India, Israel, Korea, Mexico, Malaysia, Pakistan, Philippines, Thailand, Turkey, Taiwan, and Venezuela.


16. Jeske, 2001. In the United States, this marked a significant diversification from previous years: the percentage of domestic equities in U.S. portfolios was about
94 in 1992 and 98 in 1987. U.S. Federal Reserve, *Flow of Funds Accounts of the United States*, Table L.213, http://www.federalreserve.gov/releases/Z1/Current. For other industrialized countries, home bias has remained the same or even increased. Equity portfolios in the United Kingdom, Spain, and Italy were about as diversified in 1987 as they were in 2000; in Japan, Germany, and France they were significantly more diversified in 1987. Figures for 1987 are from Cooper and Kaplanis, 1994, pp. 45–60, Table 1.


23. These rules are available in print and can also be accessed online by IASB subscribers at http://shop.iasb.org.uk/lineservices/onlinehome.asp?sc=101298595&sc={8286D35B-D3AE-4E33-B679-D7D9ADB20CD5}&sd=239426964. One can purchase a subscription by visiting the IASB shop at http://www.iasb.org/resources/shop.asp.


28. The financing of the International Accounting Standards Committee Foundation (IASCF) is described in the IASCF Annual Report, 2005. The “big four” accounting firms each contribute $1 million, out of an $18 million annual budget. The activities of IFAC are described at http://www.ifac.org.


32. U.S. Securities and Exchange Commission, 1997, p. 18. In 2001, the EC set up a procedure to review international standards one at a time, since “it is not possible politically, nor legally, to delegate accounting standard setting unconditionally
and irrevocably to a private organization over which the EU has no influence.”
34. Ruder, 2001, pp. 14–18, examines U.S. and EC approaches to enforcing account-
   ing standards. See also International Accounting Standards Survey 2000 (David
   Cairns), http://www.cairns.co.uk/surveys.asp. Adrian Michaels, “US Watchdog
   24, discusses the SEC’s efforts to intervene in cases involving foreign companies.
41. International Accounting Standards Committee Foundation Constitution, Arti-
   constitution.pdf. This structure mimicked that of the U.S. Financial Accounting
   Standards Board (FASB), the expert body that issues U.S. accounting standards
   and has been the object of fierce lobbying by large corporations, the Business
   Roundtable, and corporate trade associations. FASB reconsidered several stan-
   dards during the 1990s as a result of such lobbying, including accounting for
   stock options and intangibles and fair-value accounting of marketable securities.
   It remained to be seen whether the similar structure of the IASB would provide
   insulation from politics or encourage freelance lobbying by special interests.
42. http://www.iasb.org/about/sac_members.asp (site accessed May 3, 2006). The
   Standards Advisory Council also has three observers, one each from the Euro-
   pean Commission, the Financial Services Agency of Japan, and the U.S. Securities
   and Exchange Commission.
   pubdocs/pdf/IOSCOPD109.pdf. A list of IOSCO members is available at
   http://www.iosco.org/lists.
45. Andrew Parker, “IASB Creates Advisory Group at EC’s Request,” Financial
46. Leuz and Verrecchia, 2000, pp. 97–98, address the question of whether interna-
   tional accounting standards require more and better disclosure than German
   standards and conclude, with reference to academic opinion and the business
   press, that it does.
48. Two studies by Christian Leuz of the University of Pennsylvania (one of them
   with colleague Robert Verrecchia) of German firms switching to international
   and U.S. standards did not find a difference between the effectiveness of the
   two sets of standards in reducing information asymmetry. Leuz, 2000; Leuz and
   Verrecchia, 2000, p. 111.
49. For a discussion of these proxies, see Leuz and Verrecchia, 2000, pp. 99–100.
51. Fidler, 2004, p. 34.
52. Fidler, 2004, p. 35.


57. ProMED-mail (http://www.promedmail.org) is an Internet-based warning system open to all sources of information, administered by the International Society of Infectious Diseases.

58. Institute of Medicine, 2003, p. 16 (noting the “lack of collaborative analysis” having allowed the virus to spread); Olsterholm, 2005, p. 28.


62. Institute of Medicine, 2003, p. 8.


65. This discussion owes much to the work of Robert L. Paarlberg, who has written extensively about the politics of genetically modified food and its impact on developing countries. See Paarlberg, 2001. Other sources include Paarlberg, 2000, p. 24, and Paarlberg, 2003, p. 86. We are also grateful to Diahanna Post for her insights and helpful comments. See Post and Da Ros, 2003, and Post, 2005. A committee of the U.S. National Academy of Sciences examined these issues in depth. National Research Council, 2000.


68. Paarlberg, 2000, pp. 24 and 29.


72. Many analysts have expressed concern that agreements among national regulators create a “democratic deficit” that undermines popular sovereignty. See, for example, Reinicke, 1998, pp. 99–100, and Keohane, 2002, pp. 34–35.

73. See, for example, Kingsbury, Krisch, and Stewart, 2004, and http://www.iiilj.org.

Chapter 7. Toward Collaborative Transparency

1. Institute of Medicine, 2003, pp. 4–6; Fidler, 2004, pp. 74–80. The Institute of Medicine report also acknowledges the contribution to early reporting of the Global Public Health Intelligence Network, administered by the Public Health Agency of Canada.

2. Institute of Medicine, 2003, p. 107.


8. The first large-scale public system for bringing users together in peer-to-peer information-pooling communication was the Usenet. Predating the public Web by a decade, the Usenet is a system of distributed information sharing that was invented by graduate students at the University of North Carolina and Duke University in the early 1980s. The system is composed of geographically dispersed “news servers” that carry queries, responses, articles, and ongoing discussions posted by users. There are currently some hundred thousand such discussion groups on the Usenet, more than a fifth of which are active even now.

9. The history of the Web itself provides insight into the central role of collaboration in its development. In November 1990, Tim Berners-Lee published “WorldWideWeb: A Proposal for a Hypertext Project” as a suggestion for how scientists at CERN, the European particle physics laboratory, might share information more easily with one another and with other scientists. Berners-Lee developed all of the basic pieces for a contained Web by Christmas of that year. His Web had two breakthrough features: it combined the earlier hypertext (point and click links on a page) with the communication hardware and protocols of the Internet and also made it much easier for individuals and organizations to create Web servers and Web pages. In 1993, CERN announced that the Web would be free for anyone to use. In that same year, Marc Andreessen at the National Center for Supercomputing Applications released – free of charge – the Mosaic World Wide Web Browser. Its straightforward user interface and easy combination of text and graphics quickly made the Web the most popular protocol used on the Internet. As a result, the Internet is synonymous with the Web for most users. All contemporary browsers – Microsoft’s Explorer, Mozilla’s FireFox, and Apple’s Safari – are relatively minor and incremental evolutions of Mosaic.
11. Information pooling itself is not new, of course. Markets and political processes have long pooled the judgments of many, whether the result is an agreed-upon price for a share of Microsoft stock, the viability of a new cola formula, or the winner of a presidential election. Long before the Internet was even imagined, Zagat and other guides produced restaurant and hotel ratings based on user contributions. But advances in information technology have taken such collaborative judgments to a new level of usefulness in everyday life, making it possible to draw on a much wider group of information providers, to customize results, and to keep information current.
18. The EDGAR system can be found at http://www.sec.gov/edgar.shtml; the Web site for the Office of Labor Management Services, the office in the U.S. Department of Labor that administers the union finances disclosure system, can be found at http://www.dol.gov/esa/olms.org.htm.
19. The expanding application of information technology to the work of local, state, and federal government has spawned a number of institutions that document and analyze different applications of “digital governance.” See, for example, the National Center for Digital Government, based at the University of Massachusetts at Amherst’s Center for Public Policy and Administration and funded by the National Science Foundation (http://www.umass.edu/digitalcenter); the Program on Networked Governance, based at Harvard’s Kennedy School of Government (http://www.ksg.harvard.edu/netgov/html/index.htm); and the Center for Digital Government, which focuses on state and local government applications of information technology (http://www.centerdigitalgov.com).
20. For an in-depth discussion of the politics of toxic pollution disclosure and the development of Scorecard, see Graham, 2002a.
26. 49 C.F.R. 579.4(c).


Chapter 8. Targeted Transparency in the Information Age


2. Institute of Medicine, 1999, pp. 22–42; see also Graham, 2002a, pp. 104–136.

3. 28 PA ADC §136.21 (West, Westlaw through May 2006); 10 NYCRR §709.14 (2005).


5. This problem also arises under state laws requiring disclosure of sex offenders’ places of residence. Potential overreaction to risks posed to neighbors from released offenders can lead to a range of troubling outcomes, from local vigilantism to, in the extreme, murder (see Chapter 4). Linden and Rockoff, 2006, show that housing prices in the immediate vicinity of a listed sex offender decrease in value (by an average of $5,500) relative to comparable housing elsewhere. These results imply that homeowners perceive an increased risk from living near a released offender, although it is not clear whether this reaction represents a reasonable estimate of that risk.

6. In this example, the transparency policy provides the information necessary to strike the type of Coasian agreements between polluters and affected communities described in Chapter 2.

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8. Applying ideas from behavioral economics to public policy issues is gaining increasing interest. For example, in 2004, the Federal Reserve Board hosted a conference on the impact of ideas from behavioral economics (including the effects of cognitive biases on decision making) on a variety of critical policy areas such as health care, product safety, and environmental policy. See Thaler and Sunstein, 2003, for a related discussion of building default rules into public policy to adjust to systematic cognitive errors.


Appendix. Eighteen Major Cases

1. The Securities Act is codified at 15 U.S.C. §§78a et seq. For a detailed account of these events, see Seligman, 1995, pp. 41–42.


3. We discuss this evolution in detail in Chapter 5.


5. FASB was governed and financed by the new Financial Accounting Foundation, a non-profit organization whose trustees were nominated by five leading accounting organizations (though still elected by the board of the Association of International Certified Public Accountants, AICPA). Task forces drawn from a spectrum of interested groups as well as a broad-based advisory council gave FASB broader accountability. Unlike the previous board, its seven members held full-time positions and did not have other business affiliations. Soon after the board began operation, the SEC issued a policy statement recognizing its opinions as authoritative. Pacter, 1985, pp. 6–10. See also Seligman, 1995, pp. 452–466 and 554.


7. One response was the Securities Investor Protection Act of 1970. It produced new SEC disclosure rules that required broker-dealers to give notice when new capital was insufficient or records were not current. Seligman, 1995, pp. 451–465.

8. The scandal led to the 1977 Corrupt Practices Act, which required companies to maintain new accounting controls to assure that transactions were authorized by management. This additional transparency was designed to discourage illegal transfers. Seligman, 1995, pp. 539–549.


10. See http://www.sec.gov/pdf/handbook.pdf. Commission chairman Arthur Levitt emphasized the importance of constant vigilance to produce clear and

19. For discussions of the development of right-to-know laws and regulations in connection with health and safety risks, see Baram, 1984; Ashford and Caldart, 1985; Hadden, 1989.
21. Oleinick, Fodor, and Susselman, 1988, provide a timeline for the adoption of state right-to-know laws. By 1982 five states had worker right-to-know laws; the number increased by six new states in 1983 and eight in 1984; in 1985, twenty-seven states had worker right-to-know laws.
27. Baram, 1996. According to the author, liability and market forces promote compliance with the hazard communication standard.
29. See Occupational Safety and Health Administration, 1997.
34. The disclosure system was authorized by the Emergency Planning and Community Right-to-Know Act of 1986, 42 U.S.C. 11023(a). This account
draws on several detailed analyses of the Toxics Release Inventory, including Fung and O’Rourke, 2000; Case, 2001; Cohen, 2001; Graham and Miller, 2001; Karkkainen, 2001; Pedersen, 2001; Graham, 2002a; Hamilton, 2005.

35. Graham, 2002a, pp. 46–47.


38. In the late 1990s, the federal EPA did make available Risk-Screening Environmental Indicators software that allowed users to analyze risk in general terms using disclosed toxic chemical data, http://www.epa.gov/opptintr/rsei/index.html.


41. This discussion is drawn from a longer case study in Graham, 2002a.


46. This account is drawn from a longer case study in Graham, 2002a.

47. The Institute of Medicine defined errors as failures of planning or execution of a medical treatment. Errors were a subset of adverse events, defined as injuries attributable to medical management rather than to a patient’s underlying condition. Errors were also referred to as preventable adverse events. Institute of Medicine, 1999, pp. 23–30.

48. Institute of Medicine, 1999, pp. 1–3.


52. 28 PA. Code §136.21 (West, Westlaw through May 2006).


57. The federal Megan’s Law was preceded in 1994 by the Jacob Wetterling Crimes Against Children and Sexually Violent Offender Registration Act, which required states to establish registries for sex offenders and child molesters. The Wetterling Act also mandated more stringent registration requirements for the most dangerous offenders, designated as “sexually violent predators.” States that fail to comply with the Wetterling Act risk losing 10 percent of federal anticrime funding. Jacob Wetterling Crimes Against Children and Sexually Violent Offender Registration Act, Pub. L. 103–322, Title XVII, Subtitle A, §170101, September 13, 1994, 108 Stat. 2038. See also Adkins, Huff, and Stageberg, 2000, p. 1.

58. See “Sex Offender Registration” (Westlaw 50 State Surveys: Surveys of Criminal Laws: Sex Offender Registration, 2006).


60. In Alaska, the law had been ruled unconstitutional by the appellate courts because it punished *ex post facto* offenders who had been convicted before the state law was passed. Smith v. Doe, 538 U.S. 84 (2003). In the Connecticut case, one issue was whether disclosing offenders’ data without proving that they remained dangerous represented a violation of the guarantee of due process. Connecticut Dept. of Public Safety v. Doe, 538 U.S. 1 (2003).


62. “The legislature . . . finds that if the public is provided adequate notice and information, the community can develop constructive plans to prepare themselves and their children for the offender’s release. A sufficient time period allows communities to meet law enforcement to discuss and prepare for the release, to establish block watches, to obtain information about the rights and responsibilities of the community and the offender, and to provide education and counseling to their children.” 1994 Wash. Legis. Serv., ch. 129, §1 (codified at Wash. Rev. Code Ann. §4.24.550 (2005 & West Supp. 2006)).

63. The Washington Association of Sheriffs and Police Chiefs collects and maintains a statewide registry based on the information provided by individual county sheriff’s offices.

64. Wash. Rev. Code Ann. §9A.44.130.


66. The Web site can be found at http://ml.waspc.org.


68. The organization provides a range of services including a helpline for communities on using registry information; advocacy at the local, state, and federal level; and education, counseling, and policy research. The site maintained by the organization, http://www.parentsformeganslaw.com, also provides links to all fifty state registries as well as an evaluation of the accessibility of information. It gave Washington state a grade of “C” for its registry on the basis of a nationwide review of information accessibility in 2005.
70. 42 U.S.C. §300g-2(c)(1)–(3).
72. See, for example, MacKenzie et al., 1994; Environmental Protection Agency, 1999.
73. 42 U.S.C. §300g-2(c)(4). Regulations are codified at 40 C.F.R. §141.151 et seq.
75. Payment et al., 1991.
77. Even small amounts of lead can cause neurological problems in children and high blood pressure in adults. The EPA findings are summarized in Congressional Research Service, 2005, p. 2.
82. The series, by KCBS-TV newsman Joel Grover, aired November 16, 17, and 18, 1997, on the Channel 2 News in Los Angeles.
85. The cities that had not adopted grade cards in Los Angeles County as of 2005 were Avalon, Azusa, City of Industry, Hidden Hills, La Habra Heights, Montebello, Redondo Beach, San Marino, Sierra Madre, and Signal Hill. Restaurants in those cities were inspected and received grades from the county, but were not required to post them.
86. The DHS provides inspectors a detailed retail food inspection guide, broken into five sections. See County of Los Angeles, Department of Health Services, Retail Food Inspection Guide, H-3046 (May 2000). A subjective element (based on the inspectors’ overall assessment of hygiene status) was eliminated from the survey in July 1997 to improve the objectivity of the guidelines.
87. The guidelines define an A as “[g]enerally superior in food handling practices and overall food facility maintenance”; a B as “[g]enerally good in food handling practices and overall food facility maintenance”; and a C as “[g]enerally acceptable in food handling practices and overall general food facility maintenance.”
A score below 69 is associated with “[p]oor food handling practices and overall general food facility maintenance.” See County of Los Angeles, Department of Health Services, *Retail Food Inspection Guide*, “Understanding Your Grade,” http://www.lapublichealth.org.

88. A total of 989 restaurants out of 24,000 received closure orders in Los Angeles County in 2002. Most were temporary. See Martin Miller, “Five Years into L.A. County’s Grade-Posting Project, Most Restaurants Are Getting Top Marks,” *Los Angeles Times*, July 28, 2003.

89. The ordinance specifically requires that the grade card be posted within five feet of the point of entry. If the numeric grade is below a C, the restaurant is required to post the numeric grade in its window.

90. See Jin and Leslie, 2005, for a summary of these results. Jin and Leslie find that these changes arise from a combination of “sorting” (customers switching from restaurants with low grades to those with higher grades) and improvement in the hygiene practices of restaurants with lower ratings. See Jin and Leslie, 2003 and 2005.


92. Along with anecdotal evidence, Jin and Leslie, 2005, p. 100, report that the distribution of grades around the critical scores of 89 (the line between an A and B) and 79 (between a B and C) show a dramatic upward spike around the higher number, implying that inspectors may choose to bump up scores. If such activity occurs only at break points, this may imply only a mild form of grade inflation.

93. Miller, “Five Years into L.A. County’s Grade-Posting Project, Most Restaurants Are Getting Top Marks.”


97. These accidents and their causes were extensively reported on by Keith Bradsher of the *New York Times* in 2000.


101. For a detailed discussion of the development of the five-star rating, including reliance on focus groups, see National Academies, 2002, pp. 68–71. The government replaced numerical ratings with star ratings after a 1992 Senate and Conference Appropriations report asked that methods be improved for informing consumers of the comparative safety of new models. For ratings history, see Government Accountability Office, 2005b, pp. 10–12.


105. These requirements are set forth in 49 U.S.C. §30117(c).


114. Instructions for accessing backup crash test data are given at http://www.safercar.gov/pages/ResourcesLinksDCR.htm.


131. Attorney General Ashcroft, Director Ridge Discuss Threat Level, September 10, 2002 (White House transcript).


138. One legislative reaction was passage of the Taft-Hartley Act of 1947, which set out sweeping amendments to the National Labor Relations Act. Among other features, the law described a new set of unfair labor practices for unions, including prohibitions against secondary boycotts and other forms of concerted activities by unions, as well as new employer rights to counter union organizing activities. Gross, 1981.

139. Newspapers and radio covered the hearings closely and a number of rising political figures of the day—including John F. Kennedy and Robert F. Kennedy—made
early reputations during the proceedings. See Robert Kennedy’s 1960 account of the hearings, The Enemy Within.

140. Labor Management Reporting and Disclosure Act of 1959, Pub. L. 86–257, September 14, 1959, 73 Stat. 519 (codified at 29 U.S.C. §401 et seq. (2000)). Section 431(b) in Title 29 of the U.S. Code requires unions to file annual reports and sets forth information requirements. Section 438 of the same title provides for the secretary of labor to “have authority to issue, amend, and rescind rules and regulations prescribing the form and publication of reports required to be filed under this subchapter and such other reasonable rules and regulations (including rules prescribing reports concerning trusts in which a labor organization is interested) as he may find necessary to prevent the circumvention or evasion of such reporting requirements.” The legislation was passed by a vote of 95–2 in the Senate and 352–52 in the House.

141. Concern about the LMRDA violating union officers’ Fifth Amendment rights under the Constitution is discussed in Robb, 1961. A pessimistic view from the time concerning the prospects for improving internal union democracy through government intervention can be found in Petro, 1959.

142. The OLMS had a staff of 286 in fiscal year 1999, including an auditing staff of 5 and a total of 158 investigators. The GAO estimated that OLMS processed 2,435 reporting- and disclosure-related cases in that year, which required it to devote a little under 5 percent of its total time to these activities. See General Accounting Office, 2000, Appendix I, pp. 18–21.

143. If unions (or other parties required to file under LMRDA) willfully fail to file reports, knowingly make false statements or withhold information, or conceal or destroy materials, they face fines of up to a hundred thousand dollars and up to one year in prison. See Employment Standards Administration, Office of Labor-Management Standards, Reports Required Under the LMRDA and the CSRA (Washington, D.C.: U.S. Department of Labor, 2001).

144. The LMRDA requires each level of the union with governance responsibility to provide separate disclosure under the act, providing information regarding financial activity (revenues and expenses) only at that level of the union. This makes it a complicated matter for a user trying to examine reports of a local for information regarding related expenditures or revenues at regional and national levels.

145. See General Accounting Office, 2000, for a discussion of these costs.

146. For example, many union locals receive representation and administrative support from staff paid for by the international office of their union. These expenditures (the salaries of these individuals as well as associated expenses) show up in the accounts of the international, rather than local, union. Unions also deal with the flow of dues revenues to the various levels of the union in different ways. For example, in many unions, dues are paid to the local union, which then remits a portion of them to intermediate and national levels of the organization on the basis of per capita fees set out in union constitutions. Although the disclosure forms under the law allow one to analyze these flows, it requires significant understanding of union structures and accounting practices.

147. For critiques along these lines, see Masters, 1997.
148. For a classic discussion of the legal obstacles facing labor union representation under the National Labor Relations Act, see Weiler, 1983.


150. Reporting requirements were reduced for small unions, in part because of requirements of the Paperwork Reduction Act. Rather than filling out the detailed Form LM-2, union entities with total annual receipts of less than two hundred thousand dollars were allowed to use the simplified Form LM-3 to report financial activities. Unions with annual receipts of less than ten thousand dollars of annual receipts were allowed to file the more abbreviated Form LM-4 (adopted in 1992 and put into effect in January 1994).

151. General Accounting Office, 2000. The report also cites other reasons why unions face minimal incentives for timely reporting (e.g., cases against union entities with receipts under five thousand dollars are not even initiated until they have been delinquent filers for three consecutive years). Further, in cases where unions provided deficient information, the agency used voluntary methods to handle 90% of the cases and took no action regarding the remaining cases.

152. Interviews with Hank Guzda, U.S. Department of Labor, Office of Labor/Management Services, April 1, 2002; David Geiss, Industrial Relations Specialist, U.S. Department of Labor, Office of Labor/Management Services, April 1, 2002.


includes receipts and disbursements that total five thousand dollars or more, as well as payments to a single entity that total five thousand dollars or more in the reporting year, within certain specified categories as set out within the regulations.


158. The changes in reporting requirements were upheld in the U.S. Court of Appeals decision, American Fed’n of Labor and Cong. of Indus. Org. v. Chao, 409 F.3d 377 (D.C. Cir. 2005).


176. See http://www.ffiec.gov/about.htm (site accessed May 24, 2006).


179. Proxmire also played a leading role in the enforcement of fair lending legislation. In 1988 he held public hearings in which he urged regulatory agencies to be more aggressive in assuring lending to low-income areas. In the late 1980s regulators started to deny banks’ merger applications on the grounds of poor lending to local communities.

180. See 121 Cong. Rec. 34,581 (1975) (passage in the House) and 121 Cong. Rec. 27,623 (1975) (passage in the Senate.)


183. Financial Institutions, Reform, Recovery and Enforcement Act of 1989, Pub. L. 101–73, August 9, 1989, 103 Stat. 183 (codified in scattered sections of 12 U.S.C.). Following a wave of deregulation in the early 1980s, many savings and loans diversified their investments into unfamiliar areas. By 1987, hundreds of savings and loans had failed, the Federal Savings and Loan Insurance Corporation was insolvent, and losses amounted to more then $100 billion.

184. Community organizations argued that they represented neighborhoods that had not benefited from the bad loans that caused the savings and loan scandal and should not suffer the public costs of the bailout.


188. A 2000 Federal Reserve Board study found that the vast majority of banks operated profitably in CRA-related loans. The study analyzed the performance and profitability of CRA-related lending and reported that nearly two-thirds of responding institutions agreed that CRA-related lending had opened new business opportunities and served as a tool to promote a good image of banks in the community. Board of Governors of the Federal Reserve System, 2000,
The study showed that CRA lending was overall profitable or marginally profitable and that performance of CRA lending activities in general did not differ from mortgage activities not related to CRA. Board of Governors of the Federal Reserve System, 2000, pp. 52, 58, 62–63, and 69.

These improvements were introduced through subsequent amendments of the Federal Reserve Board’s Regulation C, which implements HMDA.

See Apgar and Calder, 2005.


A number of books influential at the time proposed a spectrum of policy solutions. At one end of the policy spectrum, Bluestone and Harrison, 1983, and Magaziner and Reich, 1982, advocated comprehensive “industrial policies” to respond to the loss of U.S. manufacturing preeminence. On the other hand, books like McKenzie, 1982, argued that restructuring was a normal feature of an evolving economy and that government intervention through plant closing legislation could have deleterious effects on economic well-being.


Both Congress and state legislatures debated various forms of plant closing legislation from the late 1970s until the passage of WARN. When the legislation was finally passed, President Ronald Reagan chose not to either veto or sign it. For a legislative history, see U.S. House of Representatives, Committee on Education and Labor, Legislative History of S. 2527, Worker Adjustment and Retraining Notification Act, Public Law 100–379, 100th Cong., 2nd sess., serial no. 101-K (Washington, D.C.: GPO, 1990).

See Ehrenberg and Jakubson, 1990, pp. 39–46, for a discussion of these critiques.

The regulation provides a number of further refinements of these definitions relating to simultaneous employment reductions in multiple units of a company as well as to the length of the employment reductions.

See 29 U.S.C. §2102(b)(2)(A) (“unforeseeable” business reasons); 29 U.S.C. §2102(b)2)(B) (natural disasters); 29 U.S.C. §2102(b)(1); and 20 C.F.R. §639.9. Exemptions also apply in cases relating to transfers or reassignments of employees, sale of a business, or strikes and lockouts. See, for example, 29 U.S.C. §2103(1) (employees hired with understanding that such employment only for the duration of a project that has since been completed); and 29 U.S.C. §2103(2) (strikes or lockouts).

The notice must include the name and address of the employment site where the closing or layoff will occur, a statement regarding whether the action is permanent or temporary, the expected date of each worker’s termination, the job titles of those affected, and the number of jobs that will be lost in each job classification. See 20 C.F.R. §639.7.

Ehrenberg and Jakubson, 1990, p. 44.

For a discussion of the limited impact of advanced notification on the universe of employment losses, see General Accounting Office, 2003b.
202. The U.S. Bureau of Labor Statistics estimated that for the eighteen-week period between September 11, 2001, and mid-January 2002, there were 430 “extended mass layoffs” directly or indirectly related to the attacks, involving more than 125,000 workers. See Levine, 2004.

203. In February 2004, the Jobs for America Act (S. 2090) was introduced to amend WARN by including offshoring in its definition of major employment events, as well as requiring collection of statistics on job loss arising from offshoring. Levine, 2004, p. CRS-2.

204. Performance-based accountability was initiated at the state level and was launched in the mid-1980s by the National Governors Association, headed by Bill Clinton, then governor of Arkansas. Many of the early systems were intended to provide schools with more flexibility in setting educational policies in exchange for accountability for resulting performance.

205. A detailed description of A Nation at Risk is offered in Kearns and Harvey, 2000, pp. 22–28.


214. Fox, “Report Cards Provide More, or Less, Data.”

215. Fox, “Report Cards Provide More, or Less, Data.”


221. http://www.iasb.org/about/iasb_board.asp; Flower and Ebbers, 2002, pp. 252–261. The Standards Advisory Council in 2004 consisted of nine Americans, fourteen Western Europeans, two Japanese, two Africans, eight Asians, two Eastern Europeans, three Latin Americans, and an Israeli, as well as six representatives of international organizations. In 2006, the Standards Advisory Council membership had changed. It consisted of four members from North America, fourteen Europeans, two Africans, eight from the Asia-Pacific region, three Latin Americans, and an Israeli, as well as seven representatives of international organizations. The IASB’s constitution, which was last revised in June 2005 and which became effective on July 1, 2005, provides that the Standard Advisory Council should be comprised of at least thirty members. See http://www.iasb.org/uploaded_files/documents/8_11_iascf-constitution.pdf. Information on the structure of the IASB is available on its Web site, at http://www.iasb.org/about/structure.asp (sites accessed May 23, 2006).

222. Testimony of David Tweedie, chairman of the International Accounting Standards Board, U.S. Senate, Committee on Banking, Housing and Urban Affairs, February 14, 2002.


226. The activities of IFAC are described at www.ifac.org. See Benston et al., 2003, pp. 76–78.


232. Institute of Medicine, 1992.
235. Institute of Medicine, 2003, p. 16.
238. Institute of Medicine, 2003, p. 8.
239. This account owes much to the work of Robert L. Paarlberg, who has written extensively about the politics of genetically modified food and its impact on developing countries. See Paarlberg, 2000, 2001, and 2003. We are also grateful to Diahanna Post for her insights and helpful comments. See Post and Da Ros, 2003, and Post, 2005. A committee of the U.S. National Academy of Sciences examined these issues in depth: National Research Council, 2000.
248. Winickoff et al., 2005, p. 87.
249. Paarlberg, 2000, p. 29.