1 *The Power of Publicity*

Publicity is justly commended as a remedy for social and industrial diseases. Sunlight is said to be the best of disinfectants; electric light the most efficient policeman.

—Louis D. Brandeis*

In 1913 Louis D. Brandeis, known as the "people's attorney" for his fights against the predatory practices of big business, had a simple but revolutionary idea. In a series of articles in *Harper's Weekly*, he proposed that requiring businesses to reveal basic financial information could encourage them to reduce risks to the public. His immediate targets were the hidden fees and commissions exacted by J. P. Morgan and other investment bankers on purchases of publicly traded stocks. Brandeis was years ahead of his time, as it turned out. It was not until nearly two decades later, in the midst of a national crisis, that his idea became the cornerstone of a new president's initiative. The stock market crash of 1929 left millions of people holding worthless securities. Accepting the Democratic Party's nomination in 1932, Franklin D. Roosevelt, who had long admired Brandeis, called for the "letting in of the light of day on

*Louis D. Brandeis, *Other People's Money,* 2d ed. (Frederick A. Stockes Company, 1932), p. 92.

issues of securities, foreign and domestic, which are offered for sale to the investing public." During the campaign he often repeated the theme: "Let in the light."[1] In response, Congress passed the Securities Act of 1933 and the Securities and Exchange Act of 1934. They required companies that sold securities to the public to reveal detailed information about their officers, earnings, and liabilities. As this reporting system matured, it would form a foundation for investor confidence for the rest of the century. Disclosure had become a form of regulation.

There was a second half to Brandeis's agenda, however. He believed that requiring businesses to reveal information could help reduce social risks as well. The archaic doctrine of *caveat emptor* was vanishing, he argued. Government-mandated disclosure in ordinary commercial transactions could remedy "social diseases." In the Pure Food and Drug Act of 1906, Congress already had required processors to inform the public about ingredients in foods shipped in interstate commerce. This idea, however, proved to be much farther ahead of its time. Brandeis's social agenda lay dormant for many more decades. Federal and state governments gradually increased their efforts to protect health and safety, but they did so mainly by issuing rules and imposing penalties.[2]

Now that is changing. In recent years the use of government authority to command the disclosure of information has taken a legitimate place beside the authority to set standards and redistribute resources as a means of reducing social as well as financial risks. Since the mid-1980s Congress and state legislatures have approved scores of laws that require systematic disclosure by corporations and other large organizations of risks they create to the public. They aim to prevent deaths and injuries from toxic chemicals, drinking water contaminants, overconsumption of fat, medical errors, and many other perils in everyday life simply by mandating that companies reveal detailed information about their contribution to those risks.

These measures employ publicity in the way that Brandeis envisioned: not as a one-time spur to action but as a means of creating continuing economic and political pressure for change. Brandeis noted that government rules and penalties inevitably were limited in effect, whereas the potent force of publicity could be used "as a continuous remedial measure."[3] He argued that "[p]ublicity offers [a] more promising remedy . . .

which would apply automatically to railroad, public-service and industrial corporations alike."[4] Like the established financial disclosure laws, new systems of social disclosure require organizations to produce standardized factual information at regular intervals, and they identify companies, facilities, or products that are sources of risk. Just as investors have long compared companies' earnings, travelers can compare airline safety records, shoppers can compare the healthfulness of cereals and canned soups, and community residents can compare toxic releases from nearby factories.

New disclosure systems follow another Brandeis precept. He emphasized that the way information was communicated was as important as its substance. It was crucial that disclosure be made directly to investors or purchasers in a format that they could understand. "It will not suffice to require merely the filing of a statement" of commissions and fees with the government, just as it would not suffice to file a statement of food ingredients with a government department. "To be effective, knowledge of the facts must be actually brought home . . . and this can best be done by requiring the facts to be stated in good, large type in every notice, circular, letter and advertisement."[5] Instead of collecting information for the government to use in making rules, these systems have followed populist and progressive tenets. They have placed in the hands of a public that is increasingly distrustful of giant corporations and their influence on the political process a means of directly applying political and economic pressure for change.

Yet the sudden prominence of the second half of Brandeis's agenda is also puzzling for several reasons. First, disclosure programs have become mainstream policy in the United States without the guidance of any central plan. Separate initiatives have percolated up through the legislative process as pragmatic approaches to diverse problems during a time characterized by regulatory retrenchment and frequent policy stalemate. Second, it is hard to imagine what forces would cause large and powerful corporations to willingly give up substantial amounts of proprietary information or empower opponents to overcome their resistance. Revealing risks affects one of the most valuable assets of any organization: its reputation. Finally, it is odd that these policy initiatives have attracted so little attention. Commercial appropriation of information about individuals

has become an increasingly contentious privacy issue, as retailers, banks, and health care providers strive to learn more about their customers. The reverse phenomenon—public appropriation of unprecedented amounts of commercial information—has barely been noticed.

Surprisingly, giving ordinary citizens systematic factual information about health and safety risks in their everyday lives has never before been a dominant theme of U.S. policy. Government rules and economic incentives have been framed mainly through debates among experts. In principle, the public has a right to much of the information that has been collected from factories, neighborhood businesses, and other community institutions to inform these mandates. But in practice, most of it has made a one-way trip to Washington or state capitals, where it has remained scattered in government files.

Many deaths and injuries have occurred in situations where facts known by company executives and small groups of experts were not communicated to individuals at risk.[6] Experts know that people who live in some neighborhoods are more vulnerable than others to risks associated with exposure to toxic pollution. Yet, until recently, no public source of information gave residents the facts to compare those health hazards. Experts know that some workplaces have much higher rates of accident or chemical contamination than others. Yet no public source of information warns prospective employees about the character and seriousness of those risks. And experts know that some hospitals are many times safer than others. Yet no public source of information tells prospective patients which nearby facility is more likely to perform surgery or administer chemotherapy without serious errors.

In the last decade, government by disclosure has emerged as a third wave of modern risk regulation.[7] Health and safety regulation in the 1960s and 1970s, a time of optimism about the capacity of government, emphasized rules and penalties, creating pressures for improvement through collective action. Regulation in the 1980s, a time of unusual optimism about market mechanisms, embraced taxes, subsidies, and trading systems (government-created markets) to further national priorities. It is not surprising, then, that regulation in the late 1980s and 1990s, a time of optimism about enormous advances in communication and information technology, produced an unprecedented array of disclosure systems.[8]

Now, advances in computer power and the growth of the Internet are transforming disclosure into a new kind of technopopulism. Acceptable levels of societal risk are established by the actions of millions of ordinary citizens, armed with factual information made accessible by the World Wide Web, instead of by legislative deliberations. The Internet has enhanced the power of disclosure by shattering a seemingly immutable law of communication: in-depth information about risks could be shared among experts; only superficial information could be shared with broad audiences. Trade-offs were inevitable between the richness of information and its reach.[9] The Internet has provided easy and fast access to layers of information that might influence economic choices or spur collective action. It has fostered integration of data from many sources to produce a more comprehensive picture of relative risks. It has created the potential for diverse users to customize information to serve their particular needs. Five years after the American public began seeking information on the web, users could quickly survey environmental problems in their neighborhoods, violations of labor laws by specific companies, or safety records of specific airlines in as little or as much detail as they chose.

However, the sudden multitude of efforts to employ transparency as an agent of social change has also shed light on the formidable challenges involved in constructing systems that work. Disclosure is inevitably a product of political compromise. Public access to information often conflicts with protection of trade secrets, personal privacy, national security, or powerful political interests. As a result, some systems define risks too narrowly, apply inappropriate metrics, or require disclosure from only a limited number of sources. Others fail to communicate effectively or lack mechanisms that encourage adaptation to market changes.

Flaws matter because disclosure can increase as well as decrease risks. If revelations are distorted, incomplete, or misunderstood, they can misinform, mislead, or cause unwarranted panic. If most facts are already known or reliable data are unobtainable, disclosure can waste public and private resources. If health risks are minor, it can draw undue attention to problems that do not warrant such scrutiny. If risks are immediate and serious, banning products or outlawing practices may be more appropriate. To be effective as an instrument of public policy, transparency requires careful design and continuing oversight.

Flaws are also important because the United States promotes transparency as a core value. Maintaining its credibility means not only patrolling the boundaries of official secrecy but also assuring that claims of transparency are legitimate. In the Oxford Amnesty lecture in 1999, Joseph Stiglitz, then chief economist of the World Bank, underscored the importance of such legitimacy: "[I]f we are truly to set an example for the rest of the world, we must confront our own issues of transparency and openness head on."[10] Disclosure systems that miss the mark create perverse results and reduce trust in government not only at home but also abroad. The sudden collapse of Enron, the nation's largest energy trader, provided a case in point. The crisis it sparked in December 2001 may ultimately be remembered as a constructive midcourse correction in the financial disclosure system. But its immediate impact was to shake the public's trust in the legitimacy of government-mandated transparency. It not only led federal regulators, members of Congress, and institutional purchasers to demand more accurate disclosure but also undermined foreign confidence in U.S. securities.

Some of the conflicts inherent in using public disclosure to reduce risks were placed in bold relief by responses to the terrorist attacks of September 11, 2001. Officials quickly dismantled user-friendly disclosure systems on government websites. They censored information designed to tell community residents about risks from nearby chemical factories; maps that identified the location of pipelines carrying oil, gas and hazardous substances; and reports about risks associated with nuclear power plants. The importance of providing public access to information about everyday risks clashed with the importance of keeping that information away from terrorists. Whether temporary measures would grow into a longer-term shift in the balance between openness and national security remained uncertain.

Emerging systems of social disclosure provide laboratories for understanding and improving the role of transparency in public policy. Each has been designed as a pragmatic response to a pressing problem. All remain works in progress. Together, they offer an opportunity to understand the scope, unique characteristics, origins, and problems associated with this promising policy tool.

Reducing Social Risks

The scope of government-mandated disclosure systems has proven remarkably broad. They have addressed risks from *products* or man-made structures; manufacturing or other *processes*; and errors, accidents, crimes and other *unanticipated events*.[11] While the list that follows is not meant to be exhaustive, the point should be clear: once viewed as an underpinning for government rules or as a public right, information is now employed by public authorities in a wide variety of situations as an instrument of social change.

Reducing Risks from Products

New laws require companies to disclose risks associated with consumer products and residential structures. In the summer of 2000 mounting evidence indicated that more than 100 people had died in automobile accidents in the 1990s, due to a combination of sudden tread separation on specific models of Firestone tires and an apparent tendency of Ford Explorers and other sport utility vehicles to roll over. In response, federal regulators proposed new tire labeling to improve safety and a warning system for tire underinflation on new models.[12] They also expedited a rating system of one to five stars that measured the likelihood of rollovers when drivers lost control. Models with one star had a risk of rollover greater than 40 percent, while those awarded five stars had a risk of less than 10 percent. Safety implications were significant, since rollovers accounted for more than 10,000 fatalities in 1999, more than side and rear collisions combined.[13]

The same year, the Federal Communications Commission responded to the growing fears of cell phone users that radio waves emitted by the phones might be associated with brain cancer. Under pressure from members of Congress and the General Accounting Office, regulators posted on the agency's website amounts of radiation absorbed from each phone model.[14]

After reports indicated that lead poisoning had harmed the health of as many as 3 million children, Congress searched for ways to create incentives for minimizing risks. A new law approved in 1992 required that

sellers, landlords, and realtors disclose known lead-based paint hazards when housing was sold or leased.[15]

New laws also established disclosure systems to reduce risks from food and drinking water. In addition to requiring nutritional labeling to reduce risks of chronic disease in 1990, Congress responded to persistent fears about the health effects of pesticide residues in foods. New regulations finalized in 2000 standardized labeling of organic fruits and vegetables so shoppers could make their own judgments about their relative safety. In 1996 Congress required that the nation's 55,000 public water systems send their customers annual "consumer confidence reports" that listed all detectable amounts of contaminants. Three years earlier, cryptosporidium, a microbe from animal waste, invaded the water supply of Milwaukee, Wisconsin. More than 400,000 people got sick, 4,400 went to the hospital, and more than 50 died. Scores of less serious incidents in the 1990s shook the public's confidence in their water supply. The new reports disclosed contaminants even in small amounts that did not violate any state or federal law. The first reports were sent to customers in October 1999.[16]

Reducing Risks from Processes

New disclosure systems also focused on ways in which food, clothing, and other familiar items were produced. Growing public concern about food safety has led regulators to consider requiring revelations about food processes as well as contents. In 2001 surveys showed that most Americans were worried about the effects of adding genes from other organisms to familiar foods. Pressure built for labeling foods that contained ingredients derived from genetically modified organisms, even if the foods themselves were chemically identical to earlier versions. (The European Union adopted such a labeling provision in 1998.)

Responding to allegations in 1996 that "sweatshops" in the United States and abroad supplied merchandise to major fashion houses like Donna Karan and Ralph Lauren, regulators employed disclosure strategies to improve working conditions. Officials at the U.S. Department of Labor established a "trendsetter list" of companies that maintained high standards and encouraged retailers to release supplier information. National rules adopted in the mid-1980s already required employers to

label known hazards in the workplace and provide detailed explanations of health problems associated with them to employees.[17]

In addition to the federal requirement that manufacturers reveal toxic releases from industrial processes, Massachusetts, New Jersey, and other states constructed their own mandates that manufacturers disclose amounts of toxic substances used in production or released into the environment.[18] In 1985 California voters approved Proposition 65, a ballot initiative that required anyone who exposed members of the public to carcinogens or reproductive toxins to issue a clear and reasonable warning unless they could demonstrate that the risk created was not significant.[19]

Reducing Risks from Unanticipated Events

A third cluster of requirements aimed to improve safety by creating incentives to minimize errors or other unanticipated events. Congress required commercial airlines to disclose serious safety incidents, which were then investigated by the National Transportation Safety Board.[20] Another federal requirement encouraged more limited sharing of information by pilots, flight attendants, mechanics, and others about near misses or minor problems for the purpose of uncovering patterns of errors that could be corrected before they caused serious harm.[21]

To reduce accidents on the job, Congress required companies to maintain records of workers' injuries and illnesses and make them available to government inspectors for use in government surveys and by employees themselves.[22] Congress also created requirements that manufacturers of prescription drugs and medical devices disclose deaths and injuries in standardized form.[23]

Improving Service Quality and Reducing Corruption

Disclosure systems have been constructed not only to reduce risks but also to improve the quality of services and reduce corruption. Congress required commercial airlines to reveal late arrivals and baggage-handling errors to create incentives for improved service.[24] After incidents in which planeloads of passengers were kept waiting on runways for hours, congressional leaders proposed a broader "passenger bill of rights" that

would require standardized disclosure of reasons for flight delays or cancellations and information regarding ticket-pricing practices.[25]

To help ensure that customers received fair treatment from lending institutions, Congress required banks, savings and loans, and credit unions to disclose the geographical distribution of their loans and investments. Such disclosure was intended to reduce "red-lining" and other forms of racial or gender discrimination.[26]

Broadening requirements first adopted in the 1970s to limit the influence of special interests in political campaigns, Congress voted in July 2000 to require disclosure of campaign contributions by certain nonprofit organizations. Some legislators advocated going further, replacing government rules altogether with a "deregulate and disclose" strategy.[27]

Disclosure Differs from Other Forms of Regulation

Disclosure strategies differ from traditional government standards and financial incentives in at least three fundamental ways. First, they aim to establish levels of acceptable risk by means of public pressure rather than deliberation. Government standards specify acceptable design or performance by legislative and regulatory processes. Economic incentives specify a legislated price or quantity of acceptable risk. Disclosure, however, influences risk through the countless actions of consumers, suppliers, employees, investors, community residents, and voters that alter organizations' decisions. Only the scope and character of information about pollution or errors are set legislatively. Gaining prominence during the 1990s, when public distrust of political processes was high, these systems, like the financial disclosure mechanism adopted in the 1930s, reflected a desire to skirt legislative processes to empower ordinary citizens.

Second, they employ communication as a regulatory mechanism. Government standards rely on rules and the threat of sanctions to encourage organizations to reduce risks. Taxes, subsidies, and other economic incentives rely on the prospect of financial loss or gain. Information strategies, by contrast, depend on improving understanding in ways that lead to changed purchasing, investing, or employment, or collective action. Placing new data in the public domain is itself intended to produce changes in markets or politics in ways that ultimately reduce risks.

Finally, most of these systems extend the reach of government. They generally seek to influence activities beyond those that are the targets of government rules, taxes, and subsidies and they create the potential for impacts that are not circumscribed by state or national boundaries. Information required in one jurisdiction becomes available everywhere, unimpeded by political or geographical barriers.

The Roots of Democracy by Disclosure

Disclosure systems that aim to reduce risks have been products of expediency and frustration. Legislators have required organizations to reveal information to produce pragmatic compromises, correct market flaws, overcome perceived shortcomings of conventional regulation, and affirm core values.

Responding to Political Stalemate and Changing Agendas

During much of the 1980s and 1990s, Democrats and Republicans shared control of the White House and Congress but often differed in their approaches to risk regulation. Even when they agreed about the need for national action to address problems such as the quality of health care or the contamination of drinking water, divisions persisted about what form that action should take. In this political atmosphere, the idea of revealing information to the public sometimes provided common ground. It combined the ideas of corporate transparency and public participation often favored by Democrats with the lower cost, less intrusive, market-oriented approaches typically championed by Republicans.

It also suited changing public agendas. In the 1960s and 1970s Congress addressed high-profile risks with uniform rules. Government standards that promoted safer cars, cleaner air and water, and more effective drugs commanded broad support. By the 1980s and 1990s, however, public concern focused increasingly on risks that were less familiar and more variable in their impact. Consumption of processed foods influenced the risk of heart disease, cancer, and other chronic ailments in ways that were specific to individuals. Moderate levels of contaminants in drinking water created health problems for some people but not others. A shifting public agenda called for new regulatory tools.

Reducing Market Flaws

Disclosure also promised to correct market flaws. A generation of economists gradually abandoned the classical assumption that markets would produce needed information. Instead, they explored the ways in which the absence of information affected social and economic outcomes. Corporations and other organizations that had knowledge of facts of interest to customers, employees, or investors often failed to produce them, due to cost or possible impact on liability, competition, or reputation. Individuals who would benefit from additional information often did not collect it. The result could be persistent information asymmetries. Companies may have understood the public risks they were creating; customers, employees, and investors often did not.[28] Such disparities not only could increase risks, they could stifle innovation. Information gaps could prevent firms from being rewarded for new and healthier products and services. They could perpetuate markets for low-quality or defective products, a theme developed by economist George Akerlof in his renowned essay, "The Market for Lemons, Quality Uncertainty and the Market Mechanism."[29]

Minimizing Endemic Problems with Risk Regulation

In addition, disclosure systems responded to growing disenchantment with the rigidities of traditional regulation. For three decades, widely publicized instances of regulatory failure, increasingly unmanageable agency workloads, reductions in federal grant funds, and growth in international commerce had highlighted limitations associated with strict standards. Optimism about the corrective power of government rules gave way to pervasive concern about their shortcomings. Economic hard times in the late 1970s and early 1980s amplified business objections to their costs. Democratic president Jimmy Carter attempted to discipline the regulatory process by requiring federal agencies to justify proposed regulations and estimate their costs. Elected in 1980, Republican Ronald Reagan went further: government was not the solution to the nation's health, safety, and environmental problems; government was the problem.

Telling the public about risks provided a middle ground. For businesses, collecting, processing, and disseminating information often seemed simple compared to submitting to new government rules. For govern-

ment, it was viewed as less contentious and easier to administer. Legislators needed to decide only what information people needed, not what level of protection was appropriate. Proponents argued that such requirements were largely self-enforcing, with information about polluters and consumer products substituting for squads of government inspectors.

Following Earlier Examples

The idea of requiring that the public be informed about risks as a means of reducing them also drew strength from historic precedent. When Congress adopted disclosure requirements to reduce financial risks seventy years earlier, no public or private organization defined accounting standards and only one-quarter of the firms listed on the New York Stock Exchange provided investors with quarterly or annual reports. Investigations revealed a network of deceptive practices. Insiders bought stock at preferred prices, managers hid liabilities, and owners made secret deals.[30] When President Franklin D. Roosevelt endorsed public disclosure, he and his advisers understood that it would transform American capitalism. What was at stake, declared one adviser, was "whether the elements of power . . . now tied to finance remain in the hands of the financial group or whether they pass . . . into the hands of the community."[31]

The Securities Act of 1933 and the Securities and Exchange Act of 1934 required companies that sold stocks to the public to disclose, in standardized form and at regular intervals, detailed information about their officers and financial practices and gave the government new authority to set accounting standards. They made corporate officers and directors, as well as outside accountants and investment bankers, liable for untrue statements or omissions of material fact. An extraordinary crisis had made possible an extraordinary transfer of previously proprietary information to the public domain. In the words of Joel Seligman, a leading historian of securities regulation, the early days of the Roosevelt administration were a rare time "when money talked and nobody listened."[32]

Starting with a narrow scope and relatively primitive metrics, that system gained credibility. Its scope broadened and its measures became more accurate. Changing markets and technology as well as searches by target companies for loopholes in existing rules led to crises that improved disclosure.

Even earlier, in the first decade of the twentieth century, Congress employed public disclosure to improve food safety. Sensational revelations by muckraking journalists created a demand for better information. In *The Jungle,* novelist Upton Sinclair had described sausage making in the Chicago stockyards: "There was never the least attention paid to what was cut up for sausage. . . . There would be meat stored in great piles . . . and thousands of rats would race about on it. . . . A man could run his hand over these piles of meat and sweep off handfuls of the dried dung of rats."[33] The same year *The Jungle* was published, Congress passed the Pure Food and Drug Act of 1906 to require accurate labeling of packaged foods shipped in interstate commerce.

Later, health, safety, and environmental laws occasionally added disclosure requirements to national standards. For example, in 1966 the National Highway and Traffic Safety Act required that automobile manufacturers provide purchasers with standardized information concerning the crashworthiness of the new models.[34] In 1969 the National Environmental Policy Act directed federal agencies to tell the public about environmental consequences of major federal actions.[35] In 1973 the Food and Drug Administration required nutritional labeling whenever food manufacturers added nutrients or made nutritional claims.[36] In 1975 the Energy Policy and Conservation Act mandated energy efficiency labels on household appliances.[37] For the most part, however, members of Congress and state legislators continued to rely on design or performance standards to reduce risks.

Building on the Duty to Warn and the Right to Know

Disclosure systems were also constructed on a foundation of American common law, which had long held manufacturers responsible for warning the public about foreseeable harm from their products.[38] To this duty, Congress had added scores of statutory provisions that mandated warnings for specific products, including cigarettes and alcoholic beverages.[39]

Beginning in the 1960s, Congress and state legislatures supplemented these requirements with the idea that the public had a "right to know" about any information held by the government, including information about risks in everyday life. Reforms to protect workers and consumers from some of the harshest consequences of industrialization called on

businesses to report to government agencies about working conditions, food processing, and other practices previously considered private. In the 1960s and 1970s union demands for information about workplace hazards and citizen groups' demands for information about neighborhood toxins inspired community "right-to-know" laws. The Freedom of Information Act, adopted in 1966 and amended several times, created a presumption that the public had a right to any information in the hands of executive branch agencies unless disclosure threatened national security, personal privacy, or other specified interests. A 1996 amendment required that new records be available electronically within a year of their creation and that agencies establish electronic reading rooms to make frequently sought records generally available on the Internet.[40]

As a practical means of providing ordinary citizens with useful information, both duty-to-warn and right-to-know requirements proved quite limited, however. Information was fragmentary. It did not help users compare products, rank risks, or judge their own exposure. Also, facts were accessible in principle but could be difficult to obtain in practice. Under the Freedom of Information Act, people had to request information piece by piece, meaning that knowledge of its existence and location was usually necessary, and they often had to wait months or years for results. For many potential users, bureaucracy and secrecy became synonymous.

New disclosure systems differed from these earlier right-to-know requirements in several respects. First, they collected information primarily to inform the public. Most right-to-know requirements had simply passed on information collected primarily to inform government actions. Second, disclosure systems served regulatory rather than normative purposes. Information was viewed as a way to change behavior, not simply as a public right. Format, timeliness, and completeness of data therefore became critical issues. Third, the new disclosure systems held creators of risks accountable. Instead of reports aggregated by industry or geographical area, the public received information about named facilities, companies, and products.

This book explores the puzzles and potential of democracy by disclosure. It sounds a cautionary note. Disclosure systems resonate with current efforts to improve public participation in government, correct market

flaws due to information asymmetries, and reap the benefits of information technology. These perspectives emphasize the promise of such systems. This book aims to add another, more skeptical dimension to our understanding of their workings. Disclosure systems are inevitably products of the political process. They result from compromises that reconcile competing values and interests. Universally acclaimed in principle, disclosure often conflicts with protection of trade secrets, personal privacy, minimization of regulatory burdens, and guarding of national security. Compromises among such values can lead to fragmentation, distorted incentives, and excessive costs. In practice, communication, too, is complicated not only by political imperatives but also by cognitive distortions and the self-interested motivations of intermediaries who add their own interpretations. Like financial disclosure, social disclosure is a simple idea that has proven extraordinarily complicated in practice.

The book's scope is limited. It focuses on the most ambitious of the new disclosure systems, those that aim to reduce health, safety, and environmental risks. It does not examine in detail the many systems constructed to improve services or reduce corruption. Its focus is also limited to government-required disclosure. The scores of voluntary certification and report card systems initiated in recent years by trade associations, consumer groups, and companies themselves deserve separate attention. Their politics and mechanics differ in fundamental ways from disclosure systems that start with a public mandate. The book's focus is also limited to an examination of disclosure policies in the United States. Developing countries have begun to employ disclosure systems as alternatives to conventional health and safety standards, and international organizations have begun to employ them as alternatives to sanctions. However, the dynamics of those systems also deserve separate analysis.

I have chosen to explore this new and varied policy terrain by constructing detailed profiles of three of the most important new disclosure systems, those that make public toxic releases, nutrients in processed foods, and medical errors. Profiles are useful mechanisms that permit readers to follow unfolding events, observe the interaction of political and economic forces, and appreciate the influence of individuals and the role of serendipity in the development of new policies. They are well suited to capture the nuances of conflicts among values and interests and

provide a sense of how those issues influence the design and evolution of particular strategies. Profiles also provide a context for understanding obstacles to effective communication, the emerging role of information technology, and complexities involved in evaluating the effectiveness of government by disclosure. They encourage readers to examine the evidence and construct their own interpretations of unfolding events. These systems are dynamic. They evolve as political and economic forces change and interact.

I have chosen these profiles to illustrate the breadth and versatility of regulation by disclosure. One addresses risks from industrial processes. A second addresses risks from consumer products. A third addresses risks from systematic errors that occur when humans and technology interact. One system influences companies' practices mainly through political pressures. A second works mainly through economic pressures. A third invokes both. The profiles also illustrate the growing sophistication of this regulatory mechanism. Disclosure of toxic chemicals—an evolutionary bridge between the idea of information as a public right and information as a means of reducing risks—took effect in 1988. Six years later a much more nuanced and explicitly regulatory system of nutritional labeling became law. Six years after that a particularly innovative effort to employ two-tier disclosure to reduce medical errors struggled for acceptance. Finally, each of these systems represents an important policy development in its own right. Each addresses what is perceived as a major societal problem and introduces innovative ways of approaching it. Each continues to be viewed as an important national initiative.

These studies are arranged in chronological sequence to highlight the evolution of this policy tool. Chapter 2 profiles the creation of one of the earliest and most important of the new disclosure programs. After a disastrous leak from a pesticide plant in Bhopal, India, in 1984 killed more than 2,000 people, Congress required U.S. manufacturers to begin revealing annually the amounts of dangerous chemicals they released into the environment, factory by factory and chemical by chemical. The profile traces the system's tumultuous course. Initially adopted as a right-to-know requirement, it was later recognized as one of the nation's most successful environmental regulations and was widely credited with encouraging target companies to cut toxic releases by nearly 50 percent in

ten years. But from serendipitous beginnings, it produced clashes among values and interests that narrowed disclosure and compromised the accuracy and completeness of reporting. Initially, new information produced welcome surprises. Government officials and environmental groups were amazed when the first round of revelations prompted some corporate executives to promise to eliminate as much as 90 percent of toxic air releases. Next, disclosure produced disappointments, as design defects contributed to public misunderstanding. Soon, though, it benefited from new and remarkable applications of information technology, which showed promise for repairing some of its earlier defects. Finally, as those applications gained momentum, they produced new and forceful efforts by industry to rein in disclosure efforts on the web.

Chapter 3 profiles what is probably the nation's most familiar disclosure system. Every day Americans encounter Congress's effort to reduce risks of heart disease and cancer through nutritional labeling. Since 1994 makers of processed foods have been required to list nutrients in government-designed panels on each box of cereal and can of soup. In some respects, nutritional labeling represented a polar opposite of the disclosure system for toxic chemicals. It concerned valued features of widely used consumer products instead of wastes from little known manufacturing processes. It relied on company-produced labels instead of government-produced reports. It influenced companies' practices through markets rather than collective action. Nutritional labeling also illustrated the evolution of disclosure requirements and their growing sophistication. Unlike the system of toxic disclosure, which listed releases only in total pounds, nutritional labeling included a remarkable effort to calibrate amounts of fat, salt, and other nutrients to risks by recommending daily allowances. Despite these differences, the two systems had much in common. Both were characterized by government-mandated disclosure of standardized information that aimed to reduce risks to the public. Both produced battles over the need for accuracy and completeness of information versus the need to minimize regulatory burdens and the benefits of federal uniformity versus state discretion. In both instances, the architecture of disclosure pieced together by Congress limited the system's usefulness to the public.

The final profile points to the future. Six years after food companies adopted nutritional labels, the Clinton administration and leading mem-

bers of Congress recommended a major new disclosure system to reduce another serious risk to public health. The Institute of Medicine shocked the nation by reporting that medical errors in hospitals killed between 44,000 and 98,000 Americans a year. Instead of new rules and penalties, the institute recommended that hospitals disclose serious errors to the public to increase pressures for safety and share information about minor errors with a narrower audience to inform management improvements. Drawing on experience with information strategies designed to improve aviation and worker safety, the institute proposed construction of two tiers of disclosure to these varied audiences, linked this system to means of reducing patterns of errors, and outlined the use of computers and the Internet that would make it work. Like the systems aimed at reducing toxic risks and chronic diseases, however, this optimistic federal plan met with political obstacles that altered its character, blocked efforts to provide patients with information needed to make informed choices, and reduced chances of effectiveness.

A concluding chapter draws together the experience of these three systems to suggest answers to puzzling questions. Can such a wide variety of separately conceived requirements be considered a cohesive policy innovation? New forms of government action are rare in the United States. Bureaucratic resistance to change, public resistance to new exercise of authority, and the complexities of deliberation create substantial obstacles. Do these policies, which have emerged without central direction or coordination, signal an important change in governance?[41]

How could a time of regulatory retrenchment and stalemate produce such innovation? The 1980s, which began and ended with economic recessions, were conservative years in U.S. domestic policy. Elected in 1980, Ronald Reagan elevated business opposition to burdensome health, safety, and environmental regulation to a dominant theme in domestic policy. In the 1990s few new regulatory laws gained support from the Republicans and Democrats who shared control of Congress.

Even more perplexing, why would major corporations and other organizations give up large amounts of previously proprietary information about activities likely to place them in an unfavorable light? Corporate managers usually have not been eager to tell the public about their contributions to societal risks. If they opposed disclosure, what coalitions proved strong enough to counter their influence?

Finally, as information technology continues to gain power, what is the future of technopopulism? At a time when there is growing concern about the shortcomings of conventional regulation, disclosure enhanced by technology represents a domain of potential strength. It creates an opportunity to place government's enduring power to command the dissemination of information in the service of public goals that are widely shared. Congress and state legislatures have channeled prevailing currents of frustration and expediency into new forms of political action.

One can imagine a rosy future. In a few years, homebuyers might routinely rely on simple digital maps to pinpoint neighborhood sources of risks ranging from crime to toxic pollution. Websites might post real-time information about levels of lead, arsenic, and microbes in drinking water, color-coding health concerns for children, the elderly, or people suffering from AIDS. Job hunters could be armed with comparisons of hazards at factories or offices, including risks posed by indoor air pollution, which scientists consider a more serious health threat to most Americans than outdoor pollution. Shoppers might quickly compare the accident rates of toys or lawn mowers as well as their prices. People shopping online might use personalized "shopbots" to consider only items that meet their personal health, safety, or environmental criteria. In groceries, familiar barcodes could link information about benefits of new disease-fighting foods with each customer's medical profile, displaying results on handheld devices. Today's piecemeal disclosure might grow into a web of reliable information about risk.

But obstacles remain formidable. Disclosure may be distorted by efforts to protect trade secrets, personal privacy, or national security. Powerful interests may truncate its scope, targets, or metrics. Like other forms of regulation, it may attract too much attention to minor problems; fail to adapt to changing markets, science, or public priorities; be weakened by a lack of resources; or become obsolete. Cognitive distortions and manipulation of data by intermediaries may subvert its goals. Whether legislated transparency ultimately becomes an effective means of reducing risks will depend on better understanding and political will.