SEVEN

Toward Collaborative Transparency

The brief but serious SARS pandemic of 2003 showed how crisis can revive a moribund international transparency policy. The response to this new and sometimes fatal disease also provided an intriguing glimpse into the future by suggesting how communication technologies can transform the way transparency systems work.

As noted earlier, emails, cell phone calls, and Internet chatroom messages from health-care workers and villagers in China's Guangdong Province in late 2002 and early 2003 first spread the word that people were falling ill from a mysterious respiratory illness. As the Chinese government continued to deny the existence of such an illness, private electronic trackers of infectious diseases, such as ProMED-mail, picked up the electronic traffic and warned that the outbreak might be caused by a previously unknown virus that attacked the respiratory system.[1]

Officially, the United Nations' World Health Organization (WHO) could not act on this information. Under its rules, which could only be changed by a vote of its 192 member nations, the WHO was supposed to respond only to government alerts. However, spurred by messages from ordinary citizens and private aggregators of data, the WHO continued to press the Chinese government for information. Confronted with de facto public knowledge, the government finally acknowledged the outbreak. In response, the WHO issued a global alert on March 12, 2003, and a travel advisory on March 15.

But by then it was already too late. SARS had infected travelers. It would spread to thirty countries in six months, killing 774 people and causing an estimated $40 billion in economic losses.[2] After the epidemic was over, the WHO's member nations changed its rules to allow the organization to respond to citizen messages as well as government alerts.

It is not too far-fetched to contend that the SARS public health crisis resulted mainly from a failure of transparency. Heeding those early messages

from villagers and local authorities in Guangdong Province might have averted a worldwide pandemic.

This glimpse of a technology-enabled future revealed that the ordinary citizens who have traditionally been the users of information could become also its sources. Villagers shared fragments of experience. Collectively, those fragments formed a compelling mosaic of a rapidly spreading infectious disease and ultimately spurred international action. In effect, geographically dispersed individuals collectively created their own transparency system using new communication technology. That system in turn changed the character of international infectious disease reporting.

INNOVATION AT THE EDGE

It is now commonplace to note that the Internet, personal computers, cell phones, remote sensing, advanced bar coding, and other leaps in information and communication technology have revolutionized the ways in which people generate and share knowledge. Transparency systems have by no means escaped these changes. To the contrary, a new generation of technology-enabled collaborative transparency is emerging as entrepreneurs, activists, regulators, and citizens invent new ways to collect, process, and distribute information.

It is still too early to predict the precise forms that third-generation transparency will take. But we can discern some of the common characteristics of such systems, suggest how they work, and consider some of the benefits they might create and some of the dangers they will face.

The next generation of transparency will likely differ from second-generation targeted transparency in two important ways. First, third-generation transparency, enabled by information and communication technologies, will empower information users themselves to provide and pool much of the essential data. By contrast, recall that second-generation systems rely upon regulators and/or self-reporting by disclosers.

Second, the methods through which users gain access to data – the "front ends" of "user interfaces" of third-generation transparency – will become much more interactive and customized, and they will be revised at a much faster pace. Users gain access to second-generation transparency systems through signage, labels, printed reports, and sometimes Web pages. Often, these channels are difficult to change in response to user feedback, new sources of data, and the changing shape of policy problems. Early experiences indicate that a hallmark of third-generation transparency systems will be that entrepreneurs – from the civic, private, and governmental sectors – will

compete with one another to develop ever more effective human interfaces. In an analogy to consumer electronics, if gaining access to second-generation transparency data is like programming a 1980s-era VCR, gaining access to third-generation data may be more like rotating the ubiquitous iPod click wheel.

We call these third-generation systems "collaborative" policies because – in contrast to first- or second-generation transparency – we anticipate that they will result from closer collaboration between the designers of transparency policies and their users. They will also facilitate the collaborative production and use of information by users themselves. Though we discuss many examples of Internet-enabled information search and collaboration in this chapter, none of these qualify as full-blown third-generation collaborative transparency systems. Today, third-generation transparency is evolving piecemeal at the edges of second-generation policies.

Third-generation systems share the fundamental features of their predecessors even as they are deeply transformed by new technologies and the social practices that accompany them (features not shared with second-generation policies are italicized):

- disclosure of factual information from target organizations *and from technology-facilitated pooled experience of information users*
- concerning specific products and practices
- in standardized, disaggregated, comparable formats
- *employing interactivity, data customization, and other capabilities of information technology*
- in order to further a policy purpose *with government playing a key role as convener and facilitator*.

As transformative as they can be, communication and information technologies will not, however, allow transparency policies to escape the political, economic, and regulatory dynamics that govern second-generation targeted disclosure systems.

Collaborative transparency policies work in essentially the same way as second-generation targeted transparency policies, with information technology contributing to each step of the "action cycle" described in Chapter 4. Information users perceive and understand new information (some of which is provided through their own efforts) and incorporate new information in their everyday choices. Target organizations note users' changed choices and, in turn, alter products and practices in ways that reduce risks or improve performance. Likewise, the political sustainability of collaborative policies is still powerfully affected by the degree to which targeted

organizations have differing interests in information disclosure and by the engagement of key users and user intermediaries in political processes, as we discussed in Chapter 5.

Collaborative transparency policies, however, promise to alter the dynamics of sustainability and effectiveness described in the preceding chapters. We explore these transformations by first reviewing how information technology expands the capacities of users, disclosers, and the government. We then analyze examples in environmental protection, public health, auto safety, and school performance in which information technologies have already enhanced second-generation policies. Next, we consider several major challenges that third-generation systems will face. Finally, we offer some preliminary ideas about how third-generation transparency changes the roles of information users, disclosing organizations, and government.

It is worth recalling that the three generations of transparency policies remain complementary. Just as targeted transparency did not replace or lessen the importance of right-to-know measures, collaborative transparency does not replace targeted measures. Instead, many hybrid transparency systems are likely to flourish.

TECHNOLOGY EXPANDS CAPACITIES OF USERS, DISCLOSERS, AND GOVERNMENT

Even though technology-driven change is still in its early stages and has not yet produced full third-generation transparency systems, it is rapidly transforming the capacities of individuals and groups to collect, process, and share information. Such change is also raising expectations about when, where, and how fast information people use in daily life will be provided and shared. Along the way, such advances are altering the roles of citizens, businesses, and government.[3]

Information Users Develop New Skills and Habits

For citizens and consumers, new opportunities to gather and share information instantly, customize it to serve specific needs, and work interactively with others are changing the way people decide where to live and work, select one product over another, choose schools or airlines, and decide how to participate in public life.

Many individuals have become accustomed to actively seeking out electronically provided information in order to find everything from apartments and dates to candidates to support for public office.

A survey conducted by the Pew Internet and American Life project in June 2004 found that the 107 million Americans who used search engines conducted about 3.9 billion Internet searches a month, about half from home and half from work. Forty-four percent reported that they urgently needed the information they were seeking, and most people (87 percent) reported that they found the information they were looking for most of the time. Half of American adults searched for health information.[4] Seventy-five million Americans sought political information on the Internet during the 2004 campaign.[5] In surveys in 2004 and 2005 the Pew Project found that 60 million Americans had turned to the Internet for help with major life decisions, up from 45 million in 2002 surveys. People sought help with major investments, job changes, illnesses, and voting choices.

Electronic fact-finding did not take place in a vacuum, however. It interacted with established social networks. The Internet helped people tap their acquaintances for advice, find experts, and provide information to compare options.[6] Aggressive seekers circulated newly discovered information around the world – without the need for intermediaries such as researchers, journalists, interest groups, or government officials. Barry Wellman has termed such technologically enhanced decision-making "networked individualism."[7]

In addition to new social habits of information search, millions of individuals are becoming accustomed to providing information to each other through the new communication technologies rather than relying on professionals. In their earliest incarnations, information technologies provided mechanisms for user collaboration around issues of common interest (for example, a large user group on the precursor to the Web was designed for Honda owners to share their experiences) and for the exchange of medical information.[8]

The communicative infrastructure of the World Wide Web itself made it even easier for ordinary individuals to become information providers and so engendered new habits of social and public information pooling. Hundreds of thousands of threaded discussions on corporate, organizational, and individual Web pages allow users to share information on everything from consumer electronics to diseases that they suffer from to the latest political intrigue or corporate disaster.[9] Millions of bloggers around the world share their thoughts about life in Baghdad, presidential politics, the latest computer designs, and nearly every other conceivable subject for a worldwide virtual audience. Wikis allow anyone to contribute to collaborative Web entries. Wikipedia, the online collaborative encyclopedia, has nearly 4 million pages of entries.[10]

On Web pages like epinions.com, babycenter.com, hotornot.com, and countless other commercial sites, users review products and services for the benefit of others, becoming active participants in the construction of specialized knowledge.[11] But active customers not only critique products, they also design them. Dell invites purchasers to design their own computers and then delivers them in days. Levi's invites customers to design their own jeans, using computer-created images for exact measurements. Nike's Times Square billboard invites passersby to use their cell phones on the spot to customize and order the shoes shown in digital splendor above. Eric Von Hippel, scholar of innovation at MIT's Sloan School, has argued that communities of "lead users" who modify products to improve them and suit them to particular needs are proliferating and becoming a major force in cutting-edge design. In one survey, for example, 22 percent of surgeons customized surgical equipment to suit their needs. In the consumer realm, 38 percent of "extreme" sports aficionados and 20 percent of mountain bikers report that they develop or modify products for their own use.[12] Customers also tailor services to suit their specific preferences and needs. Fidelity.com, for example, has created online tools that help clients design their own retirement investment plans.

Users' growing technological sophistication and accompanying expectations are not confined to commercial transactions and the search for the best-fitting pair of jeans or running shoes, however. Information-empowered users have begun to transform public debate and policy outcomes. Photos taken by individual soldiers in the American-run Abu Ghraib prison in Iraq and posted on the Web created an international debate about torturing prisoners of war in 2004. Reports by thousands of cell phone– and Internet-empowered citizens alerted authorities to the seriousness of the disaster caused by hurricane Katrina in 2005 and the failure of government relief efforts.

Businesses Gain New Challengers and Choices

Information technology is also changing the capacities of companies and other organizations to run operations efficiently, ascertain customers' preferences, and design and market products effectively. Plummeting communication costs and new communication options, along with shrinking trade barriers and transportation costs, are creating new and specialized competitors to many traditional businesses.

In *Blown to Bits*, Philip Evans and Thomas S. Wurster remind readers that "[e]very business is an information business."[13] "[B]usiness units,

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industries, supply chains, customer relationships, organizational structure . . . are held together by a 'glue,' and that glue is essentially information. The glue gets dissolved by new technologies." As a result, "evolving technological capabilities for sharing and using information can transform business definitions, industry definitions, and competitive advantage. . . . [T]he most stable of industries, the most focused of business models, and the strongest of brands can be blown to bits by new information technology."[14]

Some of the most visible signs of these changes are the sudden growth of Web competitors such as Amazon.com and Netflix.com, the outsourcing of specialized tasks to locations where they can be most efficiently performed, and the growth of new kinds of partnerships that form business networks.

Advances in information technology open new competitive strategies that provide business opportunities even as they create strategic risks and business rivals. In response to the new products and techniques of their competitors, companies are disaggregating operations into specialized units – sometimes in different cities or countries – and partnering with others.

Many of these changes benefit customers. Companies create products at lower cost. They also gain new capacity to avoid accidents, to improve product and service quality, and to discern when customers' preferences change. Pressed by large employers like General Motors and General Electric to reduce medication errors, some hospitals require doctors to enter prescriptions on handheld devices that check for accurate dosages and drug interactions. Striving to keep up with new trends, some supermarkets monitor customers' precise preferences by tracking purchases each time they shop. Wal-Mart used predictive technology to analyze the data it had collected from its 100 million customers and then to stock seven times the usual amount of Poptarts in addition to flashlights, bottled water, and beer during the 2004 hurricane season.[15]

Technology advances also increase companies' incentives as well as their capacities to meet customers' needs. As competitors move in, companies must fight harder to keep the customers they have and gain new ones. At the same time, customers have new choices and better information that makes them more willing to change their purchasing habits. Fewer are held captive by brands or shortages.[16]

Governments Adopt Information Technologies

Governments, too, gain new capacities through advances in information and communication technology. Agencies share information electronically, making possible more collaborative decisions based on richer data and

providing more comprehensive public information. The U.S. Environmental Protection Agency combines pollution, health, and enforcement data from nearly a million regulated facilities on its Envirofacts and EnviroMapper Web site.[17] An online Information Network of Public Health Officials aims to provide reliable information to state, local, federal, and private-sector representatives as well as to the public.

Governments employ technology to improve compliance and enforcement. Authorities track student loans, procurement processes, and tax payments electronically, reducing opportunities for fraud.

Most filings by public companies to the federal Securities and Exchange Commission (SEC) are done electronically through the SEC's EDGAR system. Most labor unions now file required financial reporting documents via an electronic system provided by the U. S. Department of Labor.[18]

Some government Web sites combine information from many different agencies and sources for targeted audiences. For example, Business.gov aims to provide one-stop shopping for businesses seeking answers to questions about government regulation. At all levels, governments are integrating information technology to provide constituent services, foster communication, and augment civic participation.[19]

FOUR EMERGING POLICIES

The application of information technologies to disclosure problems has already enhanced second-generation policies in at least four policy areas: environmental protection, public health, auto safety, and school performance. Although not full-blown "third-generation" systems, these cases provide insight into how the drivers of effectiveness and the political dynamics underlying sustainability are altered by the collaborative opportunities provided by new technologies.

User-Centered Transparency to Improve Environmental Disclosure

Scorecard (www.scorecard.org), an online transparency system that has sprung up at the edge of the toxic pollution disclosure policy, illustrates the potential for technology to make transparency more user-centered. Although Congress required companies to disclose annually amounts of toxic pollution at each facility beginning in 1986, such reporting has provided only a partial picture of toxic pollution in the United States.

Reporting of the quantities of toxic chemicals released by tens of thousands of factories in the United States each year represented a complex political compromise. Congress required disclosure of some toxic chemicals

but not others, and pollution from some sources but not others. Busy with other priorities, regulators at the federal Environmental Protection Agency, charged with carrying out the disclosure mandate, focused on a simple outcome: total pounds of emissions by each factory of each chemical. They decided against providing interpretions that would have offered users more meaningful information about toxicity, exposure, and resulting health risks, despite the urging of the chemical industry to do so.[20]

Regulators viewed their job as getting the data in and getting them out. They collected company reports, added up the numbers, and issued annual summaries. They did not develop an enforcement strategy to assure that required reporting took place and was accurate. In the early years of the program, Congress's investigative General Accounting Office suggested that more than a third of covered facilities failed to report at all.

Recognizing these problems, Bill Pease, a community organizer trained in toxicology, grafted onto the government disclosure system a more user-centered search format. Working at the School of Public Health at the University of California, Berkeley, in the early 1990s, Pease was deluged with requests from people to explain the newly disclosed government data on toxic pollution. He teamed up with Philip Greenspun, a graduate student in computer science at MIT, and David Abercromby, an expert in complex data systems, and developed Scorecard. The initial cost was $1.5 million, with funding from the Clarence E. Heller Foundation in San Francisco.

Launched in 1998, Scorecard customized toxic pollution data by zip code, translated complex results into maps and graphics, added toxicity and exposure information, layered data in various forms for those who want simplicity or complexity, ranked polluters, and provided ways for those who visit Scorecard's site to express their views or to email their representatives in Congress or regulators in the executive branch of the federal government.

Scorecard was not perfect. The data it provided were not as customized as they appeared; in response to zip-code inquiries about pollution, the site offered only countywide data. Its risk-scoring system and other interpretive data were controversial, partly because of the organization's assumed leanings (it was administered for many years under the auspices of Environmental Defense, an environmental advocacy group). Furthermore, Scorecard relied upon data generated by federal reporting requirements and so inherited the limitations of those regulations. It did not cover facilities that are exempted from legal disclosure requirements, nor could it publicize chemicals that were not on regulators' lists of toxics.

Nonetheless, Scorecard created a richer, more complete, more user-centered source of information, making it easier for community residents to embed data about local toxic pollution into their choices of where to live,

work, and go to school. Scorecard also reduced the chances that data would be misinterpreted by providing users with the means to translate technical chemical release information into terms relevant to their decisions.

Scorecard also changed the dynamics of toxic pollution disclosure by overcoming some of the political obstacles to improving the accuracy, scope, and timeliness of data. Information could be added and updated without appealing to government regulators or to Congress, and data from many sources could be combined and accessed. Other entrepreneurial Web sites also reported on toxic pollution, notably RTKnet (http://www.rtknet.org). Federal regulators responded to Scorecard's growing impact by making the government's Envirofacts Web site (http://www.envirofacts.gov) more user-friendly and by adopting similar formats. The Chemical Manufacturers Association, which represented some of the largest disclosing companies, also launched its own Web site (http://www.americanchemistry.com/s_acc/index.asp) to highlight factories' contributions to job creation, taxes, and quality products, as well as their improving environmental and safety performance. Improvements in transparency therefore arose from competition among alternative information platforms.

In the future, technology might even overcome Scorecard's main limitation – its dependence on the partial pollution data that government requires companies to place in the public domain. As sensor technology improves, high school students, community residents, or automated devices might take daily toxic pollution readings at locations near factories and record them on collaborative Web sites featuring user-friendly graphics, much like weather reports.[21]

Online Polling and Hospital Ranking to Improve Medical Care

Examples of emerging online public health transparency systems illustrate how users can become disclosers of information that helps patients make choices. The politics surrounding patient-care disclosure make it difficult to require hospitals or doctors to report medical mistakes or other indications of treatment quality, but individual experience, pooled electronically in a structured way can create new collective knowledge. Several examples show how such systems might combine the efforts of patients, health-care providers, and government:

- In recent years, the federal government and private groups have combined forces to create an annual survey that allows patients to assess the quality and convenience of their health plans. Patients report their

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experience. Health-care plan managers monitor the results. The federal government's Agency for Healthcare Research and Quality plays a facilitating role by establishing consistent standards and formats for the survey.[22]

- The California Health Care Foundation, an independent research organization, gives California hospitals star ratings based on patient surveys. Patients report on coordination of care, safe medical practices, information and education, and other criteria (calhospitals.org).
- Public health wikis (from the Hawaiian word for "quickly") represent another way to create collaborative knowledge. Wikis are usually open narratives created and continuously expanded, corrected, and updated by users. Fluwikie.com, for example, is a collaborative site created in June 2005 by a freelance writer from Falls Church, Virginia, to gather and share information about the spread of avian flu. Wikipedia, the collaborative online encyclopedia, offers detailed articles on avian flu and on many other specific diseases (along with a vast array of nonmedical topics).[23] In the long run, however, wikis could be reframed as structured transparency systems to facilitate collaborate information on emergent public health problems.
- Many online efforts rank hospitals' quality of care. These systems, most of which do not yet include patient input, illustrate how customized responses to specific questions can reduce users' search costs and make complex data comprehensible. Such ranking systems have been gaining ground in response to employers' demands for better means of guiding their employees to quality care.
- The federal Department of Health and Human Services ranks hospitals on the basis of Medicare and Medicaid data (hospitalcompare.hhs.gov). The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has begun to offer user-friendly online hospital rankings for treatment of heart attacks, pneumonia, and other specific diseases, searchable by hospital name or location. Rankings are based on JCAHO surveys and data submitted by hospitals in response to government and commission requirements. A check means hospital performance is on a par with that of other accredited institutions. A minus means performance is below others', and a plus means performance is above other hospitals'.[24] Many other public and private ranking systems have sprung up in recent years. In one notable effort, Massachusetts's largest health insurers have created online hospital ranking sites that allow patients to customize data according to their needs and priorities.[25]

Technology-enhanced public health transparency systems hold great promise for pooling individual experience to indicate strengths and weaknesses of hospitals, health plans, insurers, and doctors. They also hold promise for customizing information to meet diverse users' needs and for making complex data more comprehensible. In principle, such systems could create new incentives to improve transparency over time since they draw on major users' (e.g., companies providing health care for their employees) common interests in improvement in their new role as disclosers.

Collaborative Transparency to Improve Auto Safety

The federal government is also beginning to play a facilitating role in developing new knowledge to improve auto safety. In response to a spate of deaths and injuries from a combination of tire blowouts and SUV rollovers in 2002, described in Chapter 1, Congress created a new role for government in generating information: A collaborative early-warning system gathers data on consumer complaints, warranty claims, and field reports from auto company employees and dealers to inform car owners of possible safety problems. Consumers contribute information about safety problems from their own experience. Automakers act as intermediaries, aggregating data and submitting them quarterly to the government. The government acts as *facilitator*, requiring the disclosure of information, providing standardized metrics, and taking responsibility for enforcement. Automakers are required to report "communication of any kind made by a consumer" by email, telephone, letter, or other means.[26] Legislators thus created a second-generation rollover rating system and the seeds of a third-generation collaborative early-warning system at the same time.

Collaborative transparency that aims to improve auto safety holds particular promise because large numbers of users reporting on their experience with a limited number of car models are likely to create useful standardized knowledge. Such knowledge could save lives and prevent injuries by calling attention to safety defects more quickly than traditional government information gathering can produce results. Experience has shown that industry reporting often lags far behind incidents that could reveal design defects or other safety problems. Such transparency could create more accurate, complete information that is, in turn, more likely than individual complaints to be noticed by auto companies, whose actions can reduce safety risks. Like public health collaborative systems, auto safety collaborative systems create incentives to improve transparency over time, since information users themselves are the sources of information.

Collaborative Transparency to Improve School Performance

Many second-generation transparency systems aim to improve public services. Could technology-enhanced collaborative transparency help to resolve a particularly contentious national issue concerning such services: how to provide accurate, up-to-date information about the performance of public schools and encourage their improvement?

A third-generation transparency system for elementary school ratings might combine the government-mandated school report cards that already exist with the active efforts of parents and students at two levels. First, technology could enable parents and students to contribute their own experiences of schools, facilities, courses, and personnel (as they already do for college faculty on Web sites like http://www.ratemyprofessors.com). These experiences and views could be integrated into the overall rating of a school along with such standardized metrics as test scores, funding levels, and class size.

Second, all centrally designed school report card systems incorporate judgments, implicit or explicit, regarding educational outcomes that schools ought to pursue (college preparation, vocational training, civic understanding, or cultural competence, for example). They also incorporate judgments about the validity of various predictors of those outcomes (such as test scores, graduation rates, and college admission statistics). These goals and metrics may fit well with the values and preferences of some parents and communities but not with those of others. A third-generation transparency program could give parents and students a greater role in determining the goals and metrics by which school performance is measured. This could happen collectively, as user-driven discussions inject new priorities and educational goals not captured by second-generation report cards. It could also happen individually, as third-generation systems enable parents and students to select schools, classes, and teachers to suit their diverse aims and tastes.

Thus, collaborative transparency policies that pool users' experiences can make available a wide range of information, even information that governments or corporate interests might seek to suppress. They can provide information in ways that are more dynamic and responsive to the needs of users than those depending on centralized, government-directed second-generation efforts. Finally, third-generation transparency has the potential to serve a much broader and more diverse range of aims and preferences than second-generation transparency systems.

CHALLENGES TO COLLABORATIVE TRANSPARENCY

A technologically enhanced third generation of collaborative transparency also faces distinctive dangers. Experience has already shown that information technology, a neutral tool, can magnify intentional or accidental information distortions, spread deception, create sudden public scares, or serve as an instrument of manipulation. Two recent incidents are illustrative.

The week after the terrorist attacks of September 11, 2001, thousands of Internet messages warned people in Boston to stay home on September 22. They reported that Arab customers in a Boston bar were overheard to say that there would be a lot of bloodshed in Boston on that date. Many who passed along the message did it simply as a curiosity. Nonetheless, the result was a groundless public scare.[27]

Three years later, as word of the devastation of the South Asian tsunami spread in December 2004, rumormongering blogs suggested that the earthquake that caused it was related to atmospheric contamination by atomic testing, air pollution, or bombing in Iraq. All three ideas were false, of course, but the Web acted as an echo chamber.[28]

Cascades of false or distorted information spreading across the Web or via cell phones move much faster than public efforts to correct false rumors. Cass Sunstein describes this phenomenon in *Republic.com*:

> New technologies, emphatically including the Internet, are dramatically increasing people's abilities to hear echoes of their own voices and to wall themselves off from others. An important result is the existence of cyber cascades – processes of information exchange in which a certain fact or point of view becomes widespread, simply because so many people seem to believe it.[29]

Even collaborative systems can be manipulated via technology. In 2005, a mini-scandal erupted in the book publishing industry when it was disclosed that Amazon.com had been recommending particular books not on the basis of objective data or a collaborative filtering algorithm but instead because of fees paid by the publisher. Because this relationship had not been disclosed, the recommendations had the undeserved credibility of a disinterested third-party endorsement.[30]

In early 2006, the collaborative and widely read virtual encyclopedia Wikipedia was criticized for allowing to stand for 132 days an entry that implied that a seventy-eight-year-old respected former federal official, John Seigenthaler, was involved in the 1968 assassination of Robert F. Kennedy. By the time it was removed, the groundless entry had spread to several other

respected Web sites.[31] Research suggested that Wikipedia generally was no more error-prone than the *Encyclopedia Britannica*.[32] Nonetheless, the incident demonstrated how easily false and damaging information can gain credence on the Internet.

A corollary to the problem of the Internet as echo chamber is the potentially greater difficulty of sharing critical public information efficiently. Ironically, the technological wonders of the information age may create new barriers to sharing information broadly about risks and service flaws. If clusters of individuals and organizations seek out and share specialized knowledge on diverse Web sites as broader media (e.g., network nightly news programs) lose audience, it may become more difficult to build the common knowledge base that makes transparency policies meaningful.

Another danger is that organizations and individuals with narrow political or commercial interests may be able to game information systems in new ways. An irony of the information age: the Internet, which is transforming access to information, is also characterized by a new opacity concerning information's sources and reliability. Those who contribute information can do so without identifying themselves or their sponsoring organizations, or taking responsibility for what they are saying. In 2000, for example, a phony earnings report for Lucent Technologies, typical of Internet scams directed at companies' stock prices, caused its stock to lose $7 billion of value.[33]

Thus, the transparency benefits associated with advancing technology are by no means automatic. They depend heavily on the willingness of information users, disclosers, and government officials to assume new responsibilities. Rapid advances in technology do not appear to change the core factors that influence the effectiveness and sustainability of transparency policies as instruments of governance. Such advances do, however, change the ways in which information users, disclosers, and government officials create and respond to new knowledge. A new generation of technology-driven collaborative transparency can reduce search costs, enrich and broaden public information, customize data to meet users' disparate needs, and reduce political bottlenecks that have often kept second-generation transparency systems from being accurate, up-to-date, or complete. Embedding new information in the decision routines of users and target organizations remains the crucial challenge for transparency effectiveness. Concentrating dispersed users' interests in a continuing way remains the crucial challenge for transparency sustainability. Technology-enhanced transparency holds promise to assist with both.

NEW ROLES FOR USERS, DISCLOSERS, AND GOVERNMENT

Sustainable and effective third-generation transparency requires new roles for information users, target organizations, and government itself:

- Information users become more active, initiating searches for customized information and often becoming information disclosers themselves, empowered by technology to pool their experiences concerning experiences, risks, problems, and new data.
- Corporations and other target organizations respond to customers' changing capacities and expectations by employing more interactive processes and customized information both to attract new business and to track and respond to customers' preferences and public concerns.
- Governments increasingly play a facilitating, rather than controlling, role in transparency systems by supporting the new capacities of ordinary citizens to access and respond to public information. Public officials construct technology-enabled systems to discern public preferences and to further citizens' efforts to pool information about risks and public services. But their role as the principal "convener" of those systems remains essential.

As the four examples of incipient third-generation systems imply, technological leaps create the capacity for information users to originate, share, and patrol the accuracy of information they need. Many of the information asymmetries that create public risks or impair services can be solved by people pooling their experience. Others, where risks and performance problems cannot be discerned from experience, can be solved by better sensors, structured expert knowledge, and users' demands for better information from companies. At best, new public knowledge creates new incentives to reduce risks and improve services.

We have discussed the potential for better toxic pollution reporting, rating the quality of medical care, earlier auto safety alerts, and enriched school performance reports. Other opportunities abound. Restaurant goers could share information about suspected food poisoning, which now goes largely unreported, thereby augmenting less frequent public health inspections that underlie second-generation restaurant hygiene disclosure systems. City residents using simple test kits could pool information about daily levels of contaminants in drinking water. Company employees and customers could pool information about products' manufacturing defects and safety hazards. Residents of dangerous neighborhoods could collaboratively map the "no go" zones and strategize about how to make them safer.

Third-generation transparency to reduce risks and improve services therefore requires the kind of vigilant and active users that, as we have noted, have already become commonplace on commercial Web sites, blogs, and other emerging daily Web-based applications. These users will create the collaborative knowledge essential to the success of the next generation of transparency systems.

Consumers already expect a larger voice in the products they buy and the services they use. The companies and organizations that provide those products and services must listen and respond in new ways. Even in these early days of information technology, leading corporate executives and organizational managers are making fundamental changes in the way they approach relations with their customers, driven by new challenges to their businesses and by customers' changing expectations.

"We used to think we were just taking care of the consumer buying Tide," A. G. Lafley, chief executive officer of Procter & Gamble, told the *Wall Street Journal*'s Alan Murray in 2006. But "this consumer is also a citizen, is also a member of the community," and may care about animal testing or global warming.[34]

With the increase in technological capabilities, companies use advanced bar-coding and sales data to ascertain the habits of their customers and respond quickly to new concerns about risk or service quality. Food companies introduced lines of "low carb" and "trans-fat free" foods almost immediately when research and media attention focused on links to obesity and heart disease.

Retailers are beginning to use technology to deliver customized product information directly to their customers at the time and place when they make choices. Stop & Shop, a grocery retailer with 336 stores, experimented with electronic "shopping buddies" that track purchases, offer promotions, and allow customers to place deli orders as they navigate the other aisles of the store.[35] If shoppers had frequented Stop & Shop in the past, the shopping buddy already knew their preferences and would provide customized advice about items they might want to add to their lists. In 2004, Albertsons, another large grocery retailer, created wi-fi environments in its stores and introduced "shop 'n' scan" devices that customized promotions on the basis of information gathered from customers.[36] Other retailers have brought the Internet into their stores. For example, GNC, the health supplement retailer, provides Internet kiosks in its stores so that shoppers can compare the effectiveness and safety of dietary supplements.[37]

It is only a small step from store-controlled information through shopping buddies, or limited access to the Web, to customer-controlled assessments

of products' risks and benefits accessible in stores through cell phones or other handheld devices that link bar codes and Web sites that offer risk data, product by product. Dara O'Rourke, a U.C. Berkeley professor, is developing a prototype of such a system.[38]

Thus, early commercial applications suggest how technology might offer shoppers customized, current, reliable information about risks and benefits of products and services wherever and whenever they most need it. Web sites designed for cell phones or other portable devices could provide customized answers to questions about information that is excluded from product labels, airline safety and on-time records, hospital and doctor ratings, and other product- and service-related data. Interactive sites could begin with government-provided data and build in customer ratings and recommendations.

Third-generation collaborative transparency depends on government participation for the same three reasons as second-generation targeted transparency. First, only government can mandate that private organizations and public agencies disclose information, can specify user-friendly formats, and can assure access when and where users need it. Such intervention is needed when users, even marshaling their new information-pooling power, cannot obtain information to ascertain performance problems or risk. Second, only government can legislate measures to assure the longevity of transparency as political winds shift. Finally, only government can create fully accountable transparency, backed by the imprimatur of democratically elected representatives.

To foster successful collaborative transparency systems, however, government must learn to work with a lighter touch – more collaboratively and less hierarchically. Whereas government mandates both the form and the content of disclosed information in second-generation transparency, two hallmarks of third-generation transparency are that users control – in distributed and evolutionary ways – many decisions about the sorts of information to be pooled and the manner of its disclosure. Many of these efforts – as the commercial examples in this chapter show – occur outside the penumbra of legal regulation.

When there are important public purposes and values at stake, however, the active hand of government must continue to define boundaries and set minimal reporting requirements to provide the foundation for the subsequent efforts of users and volunteers. Government can, for example, mandate disclosure of key unobtainable facts, provide standard definitions and formats, offer new scientific findings, sponsor research to fill information gaps that users worry most about, assure that disclosing organizations

display risk data when and where it is most helpful to users, and patrol the boundaries of user-managed systems to minimize distortion and gaming by parties with narrow political or economic interests.

LOOKING AHEAD: COMPLEMENTARY GENERATIONS OF TRANSPARENCY

Three generations of transparency policies represent historic stages in the evolution of public access to information. Each has a place in the future of democratic governance.

First-generation right-to-know provisions allow citizens and groups to pry information out of governments that would often rather keep it secret. Preserving and expanding public access to government information remains a political struggle.

Second-generation transparency policies represent legislators' efforts to reduce risks and improve services by judging what information people need to make better choices that will in turn improve products and practices. Targeted transparency remains critical to provide information that people cannot gain from experience, such as the nutrients or allergens in food, the character and degree of air and water pollution, or the profits and losses of publicly traded companies.

Third-generation transparency will allow citizens to initiate transparency systems and to use deeply textured and varied information that is responsive to their diverse needs.

Working in combination, these three generations of transparency can, when carefully designed, deployed, and maintained, help citizens more successfully navigate the myriad economic, political, and social decisions they face in modern life. At their best, public transparency systems embody a kind of virtual partnership in which the authority of government empowers citizens to act with greater wisdom and confidence in an increasingly complex world.