

E-REGULATION[♦]

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ABSTRACT

The new face of the regulatory state is digital. In this era of e-regulation, administrative agencies use social media, web platforms, and mobile applications for regulatory purposes. New forms of online communication now allow regulators to harness public opinion as an enforcement mechanism in such diverse areas as product safety, environmental protection, workplace injury prevention, customer satisfaction in financial services, child safety, restaurant sanitation, and healthcare quality. The use of internet-based naming-and-shaming and data-sharing practices—through tweets, online posts, rankings, scores, star ratings, and other methods—serves to enforce compliance and promote corporate social responsibility. E-regulation constitutes a paradigm shift in government regulatory strategies, moving the focus to corporate reputation, information sharing, public responsiveness, and new information and communication technologies. This Article outlines e-regulation theory and its practical applications, asserting that digital tools of regulation in the twenty-first century dramatically alter the roles, expectations, relationships, and responsibilities of administrative agencies, the public, and regulated corporations. Building upon a unique theoretical perspective anchored in both regulatory strategy scholarship and corporate social responsibility literature, this Article offers a novel and thought-provoking outlook on the digital transformation of administrative regulation and its normative implications.

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INTRODUCTION

The new face of the regulatory state is digital. As part of their role to monitor and control corporate behavior, administrative agencies are now harnessing public opinion by disseminating regulatory information, messages, data, warnings, documents, statements, complaints, reports, educational material, and advice through social media, websites, mobile applications, and other online platforms. In this age of “e-regulation” (or “e-reg”), the state has shifted its position from being at the center of regulatory activity to facilitating “private regulation” by civil society in ways that were previously not possible. For example, the Occupational Safety and Health Administration (OSHA) tweets daily—and sometimes several times a day—about corporate occupational safety violations that have resulted in employee illness, injury, or death, and includes condemning regulatory statements that name the responsible companies.¹ OSHA also maintains a digital public database of records of its

¹ See Sharon Yadin, *Saving Lives Through Shaming*, 9 HARV. BUS. L. REV. ONLINE 57, 57-58 (2019), <https://www.hblr.org/wp-content/uploads/sites/18/2019/05/Yadin-Formatted-for-Online.pdf> [<https://perma.cc/9358-AA28>] (discussing OSHA tweets and press releases naming specific employers as “regulatory shaming”).

enforcement inspections, searchable on its website by the name of the establishment.²

OSHA databases enable public searching of compliant companies and public monitoring of companies that participate in agency voluntary programs that help employers reach “beyond compliance” goals.³ Other e-reg examples include the Food and Drug Administration’s (FDA) publication of “black lists,” periodically updated on its website, of pharmaceutical companies that act unethically in the markets or fail to meet regulatory requirements.⁴ Along with other regulatory agencies, such as the Consumer Financial Protection Bureau (CFPB), the FDA also posts on its website numerous documents exposing company misconduct, such as warning letters and notices of violation addressed to those companies.⁵

Another example of e-regulation is the CFPB’s Consumer Complaint Database, which is updated daily with over 100,000 user complaints on financial products and services, including bank accounts, credit cards, student loans, and other types of consumer credit.⁶ Another searchable database is published and maintained by the Consumer Product Safety Commission (CPSC), containing information on violations relating to product safety.⁷ Notably, both the online platform for the CFPB and the CPSC include a feature to support online submissions of user complaints.⁸

The FDA website further offers various multimedia resources, including YouTube videos and interactive tools for learning how to read

² See *Establishment Search*, U.S. DEP’T LAB.: OSHA, <https://www.osha.gov/pls/imis/establishment.html> [<https://perma.cc/VH93-B4LH>]; see also *Fatality Inspection Data*, U.S. DEP’T LAB.: OSHA, <https://www.osha.gov/fatalities> [<https://perma.cc/29XS-PE4M>].

³ See *OSHA’s Cooperative Programs*, U.S. DEP’T LAB.: OSHA, <https://www.osha.gov/cooperativeprograms> [<https://perma.cc/9JHS-M695>]; see also discussion *infra* Part II.A.2.

⁴ See Sharon Yadin, *Shaming Big Pharma*, 36 YALE J. ON REG. BULL. 131, 131-33 (2019), <https://www.yalejreg.com/nc/shaming-big-pharma-by-sharon-yadin> [<https://perma.cc/ZE9V-FKRQ>] (discussing the FDA’s published list of top branded pharmaceutical companies suspected of “gaming the system” to prevent fair competition).

⁵ See *id.* at 132; see also *Enforcement*, CFPB, <https://www.consumerfinance.gov/policy-compliance/enforcement> [<https://perma.cc/2WFF9-ALS5>].

⁶ See *Consumer Complaint Database*, CFPB, <https://www.consumerfinance.gov/data-research/consumer-complaints> [<https://perma.cc/2WTA-ZGUG>]; see also Rory Van Loo, *Technology Regulation by Default: Platforms, Privacy, and the CFPB*, 2 GEO. L. TECH. REV. 531, 537-39 (2018).

⁷ See *Violations*, U.S. CONSUMER PRODUCT SAFETY COMMISSION, <https://www.cpsc.gov/Recalls/violations> [<https://perma.cc/UJV4-CAF9>].

⁸ See *Submit a complaint*, CFPB, <https://www.consumerfinance.gov/complaint/getting-started> [<https://perma.cc/47B5-GYJG>]; see also *File a Report*, SAFERPRODUCTS.GOV, <https://www.saferproducts.gov/CPSRMSPublic/Incidents/ReportIncident.aspx> [<https://perma.cc/CYJ3-3EME>].

food labels,⁹ while machine-readable regulatory data published on Data.gov facilitates the private-sector development of software applications such as “Safe Eats,” which provides users with detailed information on New York City restaurant inspection results, violations, and grades.¹⁰

Within e-reg, regulatory agencies disseminate both negative and positive information on corporate activities. Agency publications on company misbehavior serve a regulatory purpose by publicly “shaming” companies into compliance and even “above-compliance” standards of corporate behavior. Publication of negative information is meant to act as a deterrent to corporations and motivate them to improve business practices in order to avoid reputational damages. Positive regulatory publications on corporate performance aim to reinforce good corporate behavior through positive public reactions. E-reg also aims to engender “regulatory literacy” skills that can enhance and improve the public’s ability to comprehend company disclosure schemes, such as product labels.

In the digital age, sophisticated yet very accessible, low-cost, and simple-to-operate online platforms—such as social media, internet websites, and mobile applications—allow regulators to reach large audiences in a matter of seconds, as well as target specific communities. They enable agencies to gather, process, and present information to the public using technology and techniques that were not previously available. For example, regulatory data is now searchable, downloadable, and interactive. It can be visually presented to the public in formats—such as infographics or color-coded ranking schemes—that enhance specific aspects of the message and enable new forms of regulatory communication. E-reg further enables regulators to reveal new information to the public through computational analysis of large datasets to uncover patterns, trends, and associations relating to corporate behavior. Digital platforms in the internet age also allow regulators to continuously update the data they post online, while responsively, constantly, and directly communicating with the public on regulatory issues.

E-regulation constitutes a new paradigm in legal-regulatory strategies employed by administrative agencies. In the past, state rulemaking and sanctioning was the dominant regulatory paradigm. But

⁹ See *Nutrition Education Resources & Materials*, FDA, <https://www.fda.gov/Food/Labeling/Nutrition/ucm20026097.htm> [<https://perma.cc/MUY2-7VKQ>] (last updated Oct. 01, 2019).

¹⁰ See *Open government data powers software applications that help consumers make informed decisions.*, DATA.GOV, <https://www.data.gov/consumer/consumer-apps-page> [<https://perma.cc/H4T3-AXU6>].

with time, a variety of other complementary regulatory approaches have emerged, shifting state regulatory powers and responsibilities to other focal points, such as the public and the regulated industries themselves. Disclosure rules applied to companies, for example, substituted regulatory restrictions and prohibitions with mandated publications, such as food labels, leaving the public to decide which products and companies are worthy of its trust. However, old disclosure mechanisms and other public-based strategies have not fulfilled their promise. But under the new e-reg paradigm, the public, as well as informational mechanisms, are regaining central regulatory roles, thereby changing the balance and relationships between administrative agencies, regulated companies, and the public at large.

E-reg rests on mechanisms designed to elicit social reactions from the public through positive and negative regulatory publications relating to regulated corporations. It thus creates an informal pact between industry, agencies, and the public, in which companies' behavior is exposed to regulatory publicity and social responses; the agencies, through e-reg, facilitate and operate open and transparent digital platforms that continually inform the public of corporate misconduct, as well as socially responsible behavior; and the public is expected to "enforce" norms through various actions. These actions can include consumer boycotts, employee strikes, public demonstrations, public discourse, media coverage, and academic research. E-reg can also influence the preferences and opinions of potential investors, shareholders, insurers, customers, employees, and creditors, such as banks. Unions, competitors, residents, politicians, professional communities, and suppliers can also play a role in the negative or positive reputational effects achieved by e-regulation.

E-reg also changes the dynamics between agencies and the public in other important dimensions. For example, e-reg can "humanize" regulatory agencies in the eyes of the public, as they communicate more directly and personally with users through outlets such as social media. The continuity, updatability, accessibility, interactivity, and dynamicity of e-reg can bring administrative agencies and the public closer together and create a sense of government accountability and sympathy, as well as a shared sense of purpose and trust between the public and the agencies. It can also help improve the public image of administrative agencies, which are unfamiliar to many, as well as curb unfounded criticism of over- or under-regulation, through increased transparency of agency work. Businesses can also better follow regulatory activities publicized via e-reg, in a manner that can promote regulatory stability and certainty. The public's central regulatory role in judging corporate actions can also lessen agency-industry confrontations.

E-reg also marks an increased reliance of agencies on information and technologies for their regulatory toolkit. In the digital age, administrative agencies create and disseminate far more regulatory information than in the past, mostly due to new technological capabilities associated with the fourth industrial revolution.¹¹ This new abundance of information may generate new regulatory resources for administrative agencies. But it also requires regulators to gain new informational and technological skills, as well as to devise normative frameworks concerning the ways in which information should be gathered, organized, presented, publicized, and updated on digital platforms. Regulators will also need to develop policies regarding the role e-regulation should play in their overall regulatory strategy.

At this stage, a preliminary note should be made regarding the use of the term “regulation” in this Article. Regulation can mean many things to different people,¹² from policing to the activity of international tribunals, and from voluntary industry codes of conduct, such as rules that stipulate which manufacturers can label their cosmetic products as “cruelty-free”¹³ or eggs as “free-range,”¹⁴ to general state control of

¹¹ The fourth industrial revolution followed the steam engine revolution, the mass production and electricity revolution, and the digital/computer revolution. See KLAUS SCHWAB, *THE FOURTH INDUSTRIAL REVOLUTION* 6–7 (2016).

¹² See Ariel Bendor & Sharon Yadin, *Regulation and the Separation of Powers*, 28 S. CAL. INTERDISC. L.J. 357, 358-59 (2019), <https://gould.usc.edu/why/students/orgs/ilj/assets/docs/28-2-Bendor.pdf> [<https://perma.cc/9NC4-T97Z>] (“[T]here is no unified understanding of regulation. Scholars and practitioners (including legislatures, judges, and even regulators) differ in their definition of regulation. The concept of regulation is even understood differently by scholars from various disciplines.” (internal footnote omitted)); see also Julia Black, *Critical Reflections on Regulation*, 27 AUSTL. J. LEGAL PHIL. 1, 8-19 (2002), <http://eprints.lse.ac.uk/35985/1/Disspaper4-1.pdf> [<https://perma.cc/47US-AMNJ>] (arguing that there is definitional chaos surrounding the meaning of “regulation” due, in part, to “the plethora of disciplinary backgrounds of those that seek to analyse ‘regulation’ in both policy and academic circles”); see also Christel Koop & Martin Lodge, *What is Regulation? An Interdisciplinary Concept Analysis*, 11 REG. & GOVERNANCE 95, 95 (2017) (“The concept of regulation is believed to suffer from a lack of shared understanding . . . [T]here is a remarkable absence of explicit definitions.”); see also Barak Orbach, *What Is Regulation?*, 30 YALE J. ON REG. ONLINE 1, 2-6 (2012), <http://162.144.71.194/~yalejreg/jopdfs/orbach-what-is-regulation.pdf> [<https://perma.cc/GZW2-6LHH>] (“[T]he term ‘regulation’ appears to escape a clear definition The evasive nature of the term ‘regulation’ is largely a product of confusion between two unrelated matters—the abstract concept of regulation and opinions about the desirable scope of regulatory power or desirable regulatory policies.”); see also Christine Parker & John Braithwaite, *Regulation*, in *THE OXFORD HANDBOOK OF LEGAL STUDIES* 119 (Mark Tushnet & Peter Cane eds., 2005), http://johnbraithwaite.com/wp-content/uploads/2016/05/2003_Regulation.pdf [<https://perma.cc/KLD2-AP5F>] (exploring the various and distinct conceptualizations of regulation).

¹³ See generally Delcianna J. Winders, *Combining Reflexive Law and False Advertising Law to Standardize “Cruelty-Free” Labeling of Cosmetics*, 81 N.Y.U. L. REV. 454 (2006), https://www.nyulawreview.org/wp-content/uploads/2018/08/5_1.pdf [<https://perma.cc/U52Y-UERL>] (discussing the need for governmental regulation over the use of “cruelty-free” labeling).

¹⁴ See generally Christine Parker, *Voting with Your Fork? Industrial Free-Range Eggs and the Regulatory Construction of Consumer Choice*, 649 ANNALS AM. ACAD. POL. & SOC. SCI. 52 (2013) (arguing that “the product choices available to consumers have been constructed not just by

human behavior, such as prohibiting the trafficking of sex workers. However, for the purpose of this Article, the meaning of the term “regulation” shall be defined as any activity performed by an administrative agency, whether executive or independent, that aims to control or influence the behavior of corporations and other private, non-governmental organizations that operate in markets and industry sectors. The purpose of this governmental intervention is to protect the public interest in safety, health, well-being, commercial fairness, affordability, access to services, and product quality.¹⁵

The question of how to regulate in a manner that generates the perfect balance between corporations’ social responsibilities, the freedom of businesses to operate in the markets, and the public’s right to be free from manipulative and exploitive corporate behavior occupies thousands of regulatory agencies around the world, as well as legal, economic, public policy, criminology, and sociology scholars.¹⁶ This Article’s mission is to shed new light on the “how” aspects of the regulatory craft and to theorize regulatory tools and processes in light of new developments at the intersection of public administration, regulatory enforcement, and technology. To that end, this Article deploys an original approach of harnessing multidisciplinary scholarship in public law, regulatory tools and strategies, corporate social responsibility (“CSR”), information and communications technology, and e-government.

This Article outlines e-regulation theory and its practical applications, goals, functions, and challenges for regulatory agencies in the twenty-first century. Normatively, it suggests that each agency should formulate specific guidelines for applying e-regulation in regulated industries, in collaboration with the public and the industry itself. Consensus-based governance of e-regulation can help increase e-reg’s public legitimacy, especially when lacking explicit statutory mandates, while industry-specific policies can aid the development of dynamic tools that are built on agency and industry professional expertise and responsiveness to changing circumstances. This Article further outlines

the regulation . . . of marketing and labeling, but also by the regulatory path taken and not taken all along the food chain”).

¹⁵ See generally ANTHONY I. OGUS, REGULATION: LEGAL FORM AND ECONOMIC THEORY 29-54 (2004) (discussing the public interest of regulatory intervention as a means of correcting market failures, such as monopoly powers and negative externalities); see also CASS R. SUNSTEIN, VALUING LIFE: HUMANIZING THE REGULATORY STATE 173-74 (2014) (discussing the role of regulation in protecting social values that are difficult or impossible to quantify, such as freedom of speech, privacy, and human dignity).

¹⁶ See, e.g., Jerry L. Mashaw & David L. Harfst, *From Command and Control to Collaboration and Deference: The Transformation of Auto Safety Regulation*, 34 YALE J. ON REG. 167 (2017), <https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=1497&context=yjreg> [https://perma.cc/7YKL-UDUW] (discussing the history and evolution of regulatory strategies employed by the National Highway Traffic and Safety Administration (NHTSA) to ensure auto safety).

key points for regulators to incorporate into their policies. For example, regulators should strive to include more positive regulatory publications, as agency publications tend to focus on negative corporate behavior. This can help to foster CSR and trust between regulatory agencies and regulated industries. Regulators should also consider how e-regulation can affect the use of complementary regulatory tools in the same industry. For example, this Article proposes that regulators decrease fines when reputational damage is expected through the use of e-reg as a complementary tool.

This Article proceeds in three parts. Part I defines e-reg and explores its applications in the administrative state through various digital media platforms and across multiple industry sectors. It further discusses the relationship between e-reg and adjacent concepts and practices, such as e-government, “regulation by robot,” and “algorithmic regulation,” establishing e-reg as a new paradigm in administrative regulation that is focused on digital regulatory information and public enforcement. Part II offers a unique account of the creation and development of the regulatory state from a tool-based legal perspective. Based on a renewed typology of the tools and strategies of the regulatory state, this perspective differentiates between state-centered, industry-centered, and public-centered approaches to regulation. The discussion focuses on the category of public-based approaches to better understand e-reg schemes and the differences and correlation between “old disclosure” tools and e-regulation. Lastly, Part III discusses the changes in administrative, public, and corporate roles and relationships in the e-reg era. It then considers how such changes are currently altering and could continue to alter the regulatory state. Specifically, it will outline the paradigm shift in regulatory government across several themes, paying particular attention to the increasing reliance of agencies on (1) information; (2) technology; (3) the public; and (4) corporate reputation, as well as the critical implications of these themes for the future of the regulatory state and its actors.

I. DIGITAL REGULATION

A. *E-Regulation: Definition and Applications*

1. Defining E-Regulation

Administrative agencies are gradually gaining new regulatory capabilities in digital and online spaces. In this Article, the term “e-regulation” refers to methods in which administrative agencies harness the public, through the communication of data via online digital platforms, to control corporate behavior. These capabilities involve the

digital collection, creation, processing, publishing, presentation, communication, and updating of information on corporate activities. Unlike approaches that use digital information for internal regulatory use, like some aspects of “regulation by robot”¹⁷ or “algorithmic regulation,”¹⁸ which can be used to predict regulatory violations, the information within e-reg is intended mainly for public use. The intended recipients of the information can include citizens, consumers, businesses, creditors, application developers, the media, interest groups, investors, plaintiffs, researchers, and any other individual or group who might be interested in regulatory information on corporate behavior.

For purposes of this Article, it is also important to differentiate e-reg from general governmental transparency, as e-reg focuses on harnessing the public to enforce regulatory norms, rather than on promoting government accountability and accessibility.

The digital revolution in government, generally labeled “e-government,” is a familiar topic in the social sciences and legal scholarship. Previous discussions on this matter include topics such as “e-publication,” “e-payment,” and “e-filing,” which refer to activities such as providing citizens with information on government processes, distributing forms and notices, and facilitating electronic payments and digital communication with officials through governmental websites, as well as enabling online filings, such as tax returns and license applications.¹⁹ The E-Government Act of 2002²⁰ defines e-government as government use of web-based internet applications and other information technologies to enhance access to government information and services for the public, other agencies, and other government entities, as well as to bring about improvements in government operations to increase effectiveness, efficiency, service quality, and transformation.²¹

¹⁷ See generally Cary Coglianese & David Lehr, *Regulating by Robot: Administrative Decision Making in the Machine-Learning Era*, 105 GEO. L.J. 1147 (2017), https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=2736&context=faculty_scholarship [https://perma.cc/JR7X-H3XY] (discussing regulatory agencies’ use of machine learning, big data, and cloud storage abilities for rulemaking, inspection, and adjudication processes).

¹⁸ See generally Karen Yeung, *Algorithmic Regulation: A Critical Interrogation*, 12 REG. & GOVERNANCE 505 (2018) (defining algorithmic regulation as “decisionmaking systems that regulate a domain of activity . . . through continual *computational* generation of knowledge”); see also Cheryl Bolen, *Goldman Banker Snared by AI as U.S. Government Embraces New Tech*, BLOOMBERG GOV’T (July 8, 2019), <https://about.bgov.com/news/goldman-banker-snared-by-ai-as-u-s-government-embraces-new-tech> [https://perma.cc/S5DE-TPV8] (discussing the adoption of artificial intelligence across regulatory agencies).

¹⁹ See John C. Reitz, *E-Government*, 54 AM. J. COMP. L. 733, 734 (2006) (surveying and categorizing various e-government practices).

²⁰ E-Government Act of 2002, Pub. L. No. 107-347, 116 Stat. 2899 (codified as amended at 44 U.S.C. §§ 101, 3501, 3504-06, 3531, 3541-49, 3601-06 (2012)), <https://www.govinfo.gov/content/pkg/PLAW-107publ347/pdf/PLAW-107publ347.pdf> [https://perma.cc/9DWF-4NGF].

²¹ See *id.*

Indeed, many aspects of e-reg stem from, and are the product of, government transparency reforms.²² Prominent landmarks in this respect include the 2009 Presidential Memorandum on Transparency and Open Government, calling on agencies to harness new technologies to publish online information regarding their activity;²³ the 2009 launch of Data.gov, the federal government's open data site with over 200,000 datasets from hundreds of data sources, including federal agencies;²⁴ and the 2011 Presidential Memorandum on Regulatory Compliance, directing agencies to make their enforcement activities accessible, downloadable, and searchable online.²⁵ However, these reforms, while influential, were mostly meant to ensure governmental accountability, help consumers make informed decisions, and share information across agencies,²⁶ rather than control corporate behavior through the public.²⁷

The information divulged within e-reg may address compliance levels of regulated companies relating to legally binding statutes, rules, and regulations, or it may address beyond-compliance standards that relate to CSR.²⁸ Information on corporate compliance may focus on the quantity and quality of regulatory violations, inspections results, enforcement procedures, and enforcement actions and decisions. Information relating to beyond-compliance standards may address issues that, while not required by law, are considered good corporate citizenship, as they promote stakeholders' (rather than only

²² See discussion *infra* Section I.B.

²³ Memorandum on Transparency and Open Government, 74 Fed. Reg. 4685 (Jan. 21, 2009), <https://www.govinfo.gov/content/pkg/FR-2009-01-26/pdf/E9-1777.pdf> [<https://perma.cc/D8QY-PERJ>].

²⁴ See Hyon Kim, *Data.gov at Ten and the OPEN Government Data Act*, DATA.GOV (May 31, 2019), <https://www.data.gov/meta/data-gov-at-ten-and-the-open-government-data-act> [<https://perma.cc/E6J3-BCAF>] (“On January 14, 2019, the OPEN Government Data Act, as part of the Foundations for Evidence Based Policymaking Act, became law. The OPEN Government Data Act makes Data.gov a requirement in statute, rather than a policy.”); see also Open, Public, Electronic, and Necessary Government Data Act, S. 760, 115th Cong. (2017), <https://www.govinfo.gov/content/pkg/BILLS-115s760is/pdf/BILLS-115s760is.pdf> [<https://perma.cc/W4A2-EHUQ>].

²⁵ Memorandum on Regulatory Compliance, 76 Fed. Reg. 3825 (Jan. 18, 2011), <https://www.govinfo.gov/content/pkg/FR-2011-01-21/pdf/2011-1386.pdf#page=1> [<https://perma.cc/5Q8S-7QQT>].

²⁶ See *id.*; see also Memorandum on Transparency and Open Government, 74 Fed. Reg. at 4685; see also CASS R. SUNSTEIN, SIMPLER: THE FUTURE OF GOVERNMENT 97 (2013) (explaining that a central goal of President Obama's 2011 memoranda, “requiring agencies with broad regulatory compliance and enforcement responsibilities to make their activities accessible, downloadable, and searchable online,” was to promote accountability).

²⁷ Agency publications within e-regulation may serve various purposes other than reputation-based regulation. For example, they may help the public in choosing a product or a service, aid researchers, promote government transparency and warn consumers. This Article focuses on the regulatory effects of such publications through social responses to corporate reputations.

²⁸ See Douglas M. Branson, *Corporate Social Responsibility Redux*, 76 TUL. L. REV. 1207, 1217 (2002) (explaining that corporate social responsibility focuses on the social and moral aspects of the corporation's community activities).

shareholders') interests.²⁹ Beyond-compliance regulation may aim to encourage corporations, for example, to decrease pollution below authorized levels, increase workplace diversity, improve customer service practices, promote fairness, dignity and equality in business, promote human rights, donate to various social causes, promote workplace safety and welfare programs, practice good corporate governance, and generally encourage "corporate conscience."³⁰

Information on corporate performance and behavior presented and published by administrative agencies within e-reg may be either positive or negative in nature. For example, it may indicate that a company is compliant both with laws and social responsibility norms, or it may indicate exactly the opposite and emphasize negative aspects of corporate behavior. Thus, e-reg could help or damage corporate reputation and business results, or it may be neutral in its impact on both. The reputational effect is especially relevant in situations in which e-reg facilitates agency disclosure of information while naming specific firms and organizations, rather than addressing entire sectors and industries or providing other general regulatory information.³¹

The label "e-reg," as it is used in this Article, theoretically integrates and collectively analyzes various forms of information-based agency tools, technologies, styles, and techniques in the digital age.³² While some

²⁹ See Archie B. Carroll, *Corporate Social Responsibility: Evolution of a Definitional Construct*, 38 BUS. & SOC'Y. 268, 273-84 (1999), https://is.muni.cz/el/econ/podzim2015/MPH_AMA2/um/58872690/Corporate_Social_Responsibility_-_Evolution_of_a_Definitional_Construct.pdf [<https://perma.cc/4DK6-EGXD>] (discussing the numerous and wide-ranging definitions for corporate social responsibility that emerged in the 1970s).

³⁰ See Alexander Dahlsrud, *How Corporate Social Responsibility is Defined: An Analysis of 37 Definitions*, 15 CORP. SOC. RESP. & ENVTL. MGMT. 1, 4, 7-11 (2008) (developing five dimensions of corporate social responsibility through a content analysis of existing corporate social responsibility definitions); see also Christine Parker, *Meta-Regulation: Legal Accountability for Corporate Social Responsibility*, in THE NEW CORPORATE ACCOUNTABILITY: CORPORATE SOCIAL RESPONSIBILITY AND THE LAW 207, 208 (Doreen McBarnet et al. eds., 2007) (discussing labels of corporate social responsibility, such as corporate conscience and meta-regulation).

³¹ See generally Sharon Yadin, *Regulatory Shaming*, 49 ENVTL. L. 407 (2019), <https://law.lclark.edu/live/files/28501-49-2yadinpdf> [<https://perma.cc/F7XV-XT2T>] (discussing the "regulatory shaming" of specific companies through both digital and non-digital means).

³² While other articles have used the label "e-regulation," to the best of my knowledge, it has never been applied to the context explored in this Article. See Matthias Finger & Gaëlle Pécoud, *From e-Government to e-Governance? Towards a Model of e-Governance*, 1 ELECTRONIC J. E-GOV'T 52, 52 (2003) (referring to e-regulation as the state's role in supervising private corporations that provide autonomized services, such as document tracking within government services and statistical information on government performance, such as average licensing periods); see also Rónán Kennedy, *E-Regulation and the Rule of Law: Smart Government, Institutional Information Infrastructures, and Fundamental Values*, 21 INFO. POLITY 77 (2016) (defining e-regulation as the use of information and communications technology, such as speed cameras and remote sensing, by governments, industries, NGOs, and citizens); see also Matthias Finger, *A Critical Analysis of the Potential of Information and Communication Technologies for Democracy and Governance*, in E-GOVERNMENT AND WEBSITES: A PUBLIC SOLUTIONS HANDBOOK 81, 82 (Aroon Manoharan ed.,

applications of digital regulation, such as regulation by databases³³ and mobile applications based on big data,³⁴ were previously (and separately) discussed in legal scholarship, e-reg offers a much more comprehensive outlook on the new and growing digital sphere of administrative regulation. It also offers, for the first time, a unique theoretical perspective on digital regulation in the information age,³⁵ anchored in both regulatory strategy scholarship and CSR literature.

2. E-Regulation Applications

E-reg encompasses various applications in the administrative world. One aspect of e-reg involves the collection and use of large sets of regulatory data by administrative agencies for regulatory purposes. Data incorporated in various regulatory digital platforms is not only easily accessible to interested stakeholders from any digital device, freely and quickly, but can also be easily updated and enable searches that allow for the data to be presented in specific ways, according to user preferences.³⁶

For example, OSHA's digital records of thousands of safety violations and inspection results from worksites around the country are available through a search engine on the agency's website.³⁷ This type of information on regulatory violations and misbehavior, as well as on exemplary compliance, enables regulators not only to warn various stakeholders, such as employees and investors, or to provide data to support informed decision-making, but also to hurt or boost corporate reputations, induce appropriate actions and reactions from the public, deter corporations, and encourage desirable business practices. These goals are reflected in the preamble of the OSHA recordkeeping rule,³⁸ which was promulgated in 2016 to extend employers' online reporting obligations. The preamble states that the agency believes that the benefits of the rule include "increased prevention of workplace injuries and

2014) (construing e-regulation to be the "use of ICTs and the Internet to regulate liberalized services").

³³ See Nathan Cortez, *Regulation by Database*, 89 U. COLO. L. REV. 1 (2018).

³⁴ See Rory Van Loo, *Rise of the Digital Regulator*, 66 DUKE L.J. 1267 (2017), <https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=3891&context=dlj> [<https://perma.cc/4K66-5ESD>].

³⁵ For a previous work on digital agency publicities, see Nathan Cortez, *Adverse Publicity by Administrative Agencies in the Internet Era*, 2011 BYU L. REV. 1371 (2011) (examining judicial review, agency guidelines, and congressional restraints pertaining to various adverse agency publicities, such as safety warnings).

³⁶ See, e.g., *supra* notes 6-8 and accompanying text.

³⁷ See *Establishment Search*, *supra* note 2; see also *Fatality Inspection Data*, *supra* note 2.

³⁸ 29 C.F.R. §§ 1902, 1904 (2016), <https://www.govinfo.gov/content/pkg/CFR-2016-title29-vol5/pdf/CFR-2016-title29-vol5-subtitleB-chapXVII.pdf> [<https://perma.cc/ULJ2-PACU>]. However, the electronic recordkeeping rule was revoked shortly after its enactment. See 29 C.F.R. § 1904 (2019), <https://www.govinfo.gov/content/pkg/CFR-2019-title29-vol5/pdf/CFR-2019-title29-vol5-part1904.pdf> [<https://perma.cc/Z39P-9B5P>].

illnesses as a result of expanded access to timely, establishment-specific injury/illness information by OSHA, employers, employees, employee representatives, potential employees, customers, potential customers, and researchers.”³⁹

Complaint portals created and maintained by administrative regulators, such as the CFPB, give users free and immediate access to information on specific companies that have generated customer dissatisfaction.⁴⁰ Information on violations relating to product safety, published by the CPSC, allows users to search from any device (computer, smartphone, or tablet) for a specific product or firm and learn about its safety violations, such as misleading product labels or the presence of lead in children’s products, and the agency’s subsequent requested action.⁴¹

Regulators use e-reg to digitally create, process, interactively and graphically present, disseminate, and update league tables, ratings, and scores of regulated corporations based on performance.⁴² For example, the Department of Health and Human Services (HHS) provides a searchable platform on its website, which rates nursing homes based on a five-star scale that reflects recent health inspection results, staff-resident ratios, and clinical data.⁴³ OSHA produces and publishes an “incident rate,” which measures the safety levels of employers so that comparisons can be made between them.⁴⁴ The incident rate aids various stakeholders—including potential investors and shareholders, potential insurers, potential customers in biddings, potential employees, and potential creditors, such as banks—in making an informed decision, thus encouraging efforts to improve occupational safety within organizations.⁴⁵ These regulatory web platforms enable users to search for information on a specific company’s performance, as well as the performance of an entire sector. Information on entire sectors may

³⁹ 29 C.F.R. §§ 1902, 1904; *see* Improve Tracking of Workplace Injuries and Illnesses, 81 Fed. Reg. 29623 (May 12, 2016).

⁴⁰ *See Consumer Complaint Database*, *supra* note 6.

⁴¹ *See Violations*, *supra* note 7.

⁴² *See generally* Yadin, *supra* note 31 (categorizing administrative actions that aim to publicly denounce corporations for misbehaving as “regulatory shaming”).

⁴³ *See, e.g., About Nursing Home Compare data*, MEDICARE.GOV: NURSING HOME COMPARE, <https://www.medicare.gov/nursinghomecompare/Data/About.html> [<https://perma.cc/F9J5-7ZCY>].

⁴⁴ *See Establishment Specific Injury & Illness Data (OSHA Data Initiative)*, U.S. DEP’T LAB.: OSHA, https://www.osha.gov/pls/odi/establishment_search.html [<https://perma.cc/N8C4-PTYU>] (“An incidence rate of injuries and illnesses is computed using the following formula: (Number of injuries and illnesses X 200,000) / Employee hours worked = Incidence rate.”).

⁴⁵ *See* David Trainer, *A Hidden Turnaround Story In The Infrastructure Sector*, FORBES (July 8, 2019, 9:16 AM), <https://www.forbes.com/sites/greatspeculations/2019/07/08/a-hidden-turnaround-story-in-the-infrastructure-sector/#7362a81144e5> [<https://perma.cc/Z9SN-66BE>].

“shame” specific industries into better corporate practices through public attention, media coverage, and academic research.

E-reg opens new ways for regulators to present information on corporate performance to the public. For example, the Environmental Protection Agency (EPA) publishes facility-based search engines on its website, with detailed textual, numerical, and graphical information on air, water, and land pollution.⁴⁶ Though the agency published its first reports in the 1980s, today’s EPA data is readily available to the public through online interactive databases.⁴⁷ Under the agency’s Toxics Release Inventory (TRI) Program, for example, a rich web platform on the agency’s website provides the public with interactive maps presenting detailed information on polluting facilities and supports user-generated reports conducted according to specific criteria.⁴⁸ Colors and graphics are utilized to make the information readable and accessible; for example, non-compliant facilities are marked red.⁴⁹ The publication of the information is intended to motivate facilities to reduce pollution levels, fearing reputational damage with the public.⁵⁰

Similarly, OSHA offers a digital platform that enables users to look for enforcement data relating to safety violations that incurred penalties by geographical area on an interactive map (see Figure 1).⁵¹



Figure 1. OSHA Enforcement Cases with Penalties over \$40,000

⁴⁶ See *Toxics Release Inventory (TRI) Program*, EPA [hereinafter *TRI Program*], <http://www.epa.gov/toxics-release-inventory-tri-program> [<https://perma.cc/882M-FR69>].

⁴⁷ See Cortez, *supra* note 33, at 44-45 (discussing the agency’s Toxics Release Inventory (TRI) Program).

⁴⁸ See *TRI Program*, *supra* note 46.

⁴⁹ See *id.*

⁵⁰ See Cortez, *supra* note 33, at 44-45.

⁵¹ See *Enforcement Cases with Initial Penalties of \$40,000 or Above*, U.S. DEP’T. LAB.: OSHA, <https://www.osha.gov/enforcement/toppenalties/bystate> [<https://perma.cc/9S8J-HNFE>].

The cultivation of big data by regulators, including through regulatory requirements that corporations submit large data files—for example, with all the current pricing of their products or services—allows regulators or private-sector application, mobile, and web developers to present the public with useful data that may aid in the process of market regulation.⁵² Various applications based on datasets have been developed for users, such as Recalls.gov, which provides information on unsafe products from six federal agencies,⁵³ and the Chemical and Product Categories database, which catalogs the use of over forty thousand chemicals and their presence in different consumer products.⁵⁴

E-reg also offers administrative agencies immediacy, interactivity, and the wide distribution of information for regulatory purposes through social media platforms such as Twitter, Facebook, and LinkedIn. OSHA's use of social media is a prominent example, as it often tweets, sometimes several times a day, about occupational safety violations that resulted in illness, injury, or death, or that pose significant hazards to employees.⁵⁵ These announcements are also posted on OSHA's homepage and circulated to its newsletter subscribers.⁵⁶ The announcements often include condemnatory language about the poor ethics of specific employers and their low level of commitment to worker safety to create a public shaming effect.⁵⁷ For example, one agency announcement stated that “[the company’s] history of safety violations continues, putting employees . . . at risk of serious injuries; [the company’s] 10th inspection since 2011 yields \$1.9M in penalties . . . [the company’s] extensive list of violations reflects a workplace that does not prioritize worker safety and health.”⁵⁸

OSHA's former administrator, Dr. David Michaels, stated that these “reporting requirements will ‘nudge’ employers to prevent worker

⁵² See Van Loo, *supra* note 34, at 1268-71 (discussing administrative agencies' use of digital intermediaries as a regulatory instrument).

⁵³ See WWW.RECALLS.GOV, <https://www.recalls.gov> [<https://perma.cc/9NNS-ANLS>].

⁵⁴ See *Consumer Product Category Database*, DATA.GOV, <https://catalog.data.gov/dataset/consumer-product-category-database-8a556> [<https://perma.cc/U4NA-CM5A>] (last updated Mar. 3, 2017).

⁵⁵ See OSHA (@OSHA_DOL), TWITTER, https://twitter.com/OSHA_DOL [<https://perma.cc/DM66-56W6>].

⁵⁶ See U.S. DEP'T LAB.: OSHA, <https://www.osha.gov> [<https://perma.cc/29M7-4B4R>]; see also *QuickTakes*, U.S. DEP'T LAB.: OSHA, <https://www.osha.gov/as/opa/quicktakes/qt111618.html> [<https://perma.cc/J7JJ-YK62>]; see also *News Releases*, U.S. DEP'T LAB.: OSHA, <https://www.osha.gov/news/newsreleases> [<https://perma.cc/K3JD-K2K9>].

⁵⁷ See generally Yadin, *supra* note 1.

⁵⁸ See *Region 2 OSHA News Release - Aluminum manufacturing company's history of safety violations continues, putting employees at Camden County facility at risk of serious injuries*, U.S. DEP'T LAB.: OSHA (July 21, 2017), <https://www.osha.gov/news/newsreleases/region2/07212017> [<https://perma.cc/LFK5-UWEP>].

injuries and illnesses to demonstrate to investors, job seekers, customers and the public that they operate safe and well-managed facilities.”⁵⁹ Other stakeholders who may participate in this regulatory shaming process include unions, investors, local, state, and other politicians, the media, competitors, suppliers, creditors, residents, and the employer’s professional community.⁶⁰

Other OSHA tweets are positive in nature, addressing companies that have voluntarily joined one of the agency’s cooperative programs.⁶¹ Programs such as the OSHA Strategic Partnership Program (OSPP) facilitate partnerships between the agency and various private stakeholders, such as employers and employees, to achieve high occupational health and safety levels with agency assistance and

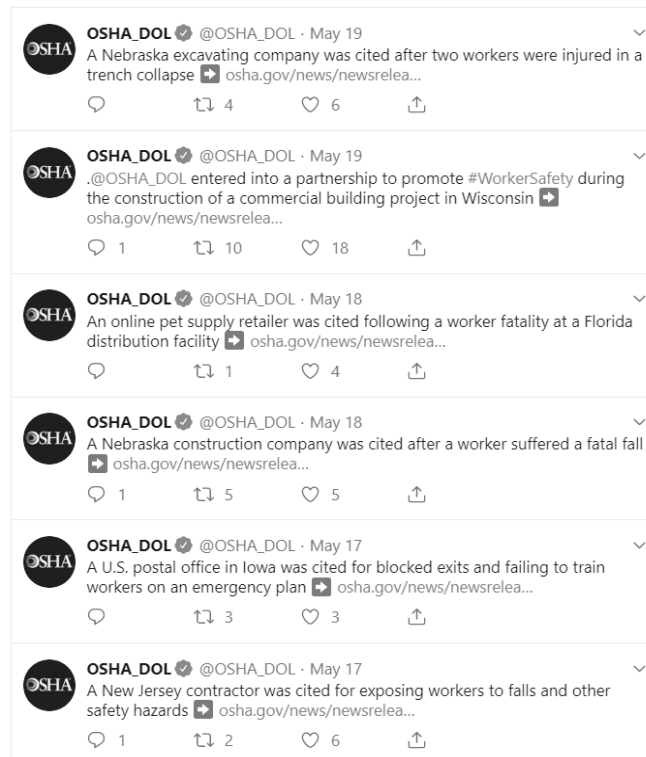


Figure 2. OSHA’s Twitter Account, May 17–19, 2019

⁵⁹ See *OSHA National News Release – OSHA’s final rule to ‘nudge’ employers to prevent workplace injuries, illnesses*, U.S. DEP’T LAB.: OSHA (May 11, 2016), www.osha.gov/news/newsreleases/national/05112016 [<https://perma.cc/9DUD-5KFS>]; see also *OSHA Statement - Statement on Updates to OSHA’s Recordkeeping Rule by Assistant Secretary for Occupational Safety and Health Dr. David Michaels*, U.S. DEP’T LAB.: OSHA (Sept. 11, 2014), <https://www.osha.gov/news/newsreleases/statement/09112014> [<https://perma.cc/5WCP-MNV9>].

⁶⁰ See Yadin, *supra* note 1, at 63.

⁶¹ See OSHA (@OSHA_DOL), *supra* note 55; see also *infra* notes 159-160 and accompanying text; see also sources cited *supra* note 3 and accompanying text.

recognition.⁶² Figure 2 shows OSHA's Twitter account activity over three consecutive days in 2019, with five citation reports and one report of a company joining the agency's cooperative program.⁶³ The public can comment on, share, and "like" these agency tweets.

The FDA similarly deploys e-reg tactics through social media platforms such as Twitter, issuing real-time warning messages to the public regarding specific food products and recalls.⁶⁴

E-regulation is also harnessed to enhance other information-based mechanisms of regulation—for example, to support mandated disclosure schemes. Many industries, such as pharmaceuticals, television and movies, gaming, and retail, are regulated through mandated disclosure rules, which require companies to reveal product and service information to consumers and other relevant stakeholders.⁶⁵ Such disclosure mechanisms, which in the past were criticized as indecipherable to consumers,⁶⁶ have been transformed and enhanced through electronic regulation schemes.⁶⁷ For example, the FDA now uses online interactive activities to help children and adults become acquainted with labeling systems, such as the FDA's nutrition labels on packaged foods.⁶⁸ The FDA provides an interactive tool on its website that allows users to explore the various sections of the label and download printable nutrition fact sheets to keep and share.⁶⁹ A virtual world designed for children allows them to practice label reading in an online community and develop skills for making healthy snack choices in the real world.⁷⁰ E-reg can therefore promote "regulatory literacy"—an approach that aims at education, skill-building, proficiency, and knowledge-building regarding

⁶² See *What is an OSHA Partnership?*, U.S. DEP'T LAB.: OSHA, https://www.osha.gov/dcsp/partnerships/what_is.html [<https://perma.cc/4M6H-X6UV>].

⁶³ See *id.*

⁶⁴ See U.S. FDA (@FDArecalls), TWITTER, <https://twitter.com/FDArecalls> [<https://perma.cc/HC8A-K8R3>].

⁶⁵ See discussion *infra* Part II.B.

⁶⁶ See, e.g., R. Glenn Cummins et al., *Visual Attention to and Understanding of Graphic Program Advisories: An Eye-Tracking Study*, 61 J. BROAD. & ELEC. MEDIA 703, 703 (2017) (fewer than half the viewers can properly identify the meaning of the current television rating system); see also Bradley S. Greenberg et al., *Young People's Responses to the Age-Based Ratings*, in THE ALPHABET SOUP OF TELEVISION PROGRAM RATING 83 (Lynn Rampoldi-Hnilo & Dana Mastro eds., 2001) (children are not usually aware of content ratings and rarely use them).

⁶⁷ See discussion *infra* Part II.B.2.

⁶⁸ See *Nutrition Facts Label: Read the Label Youth Outreach Materials*, FDA, <https://www.fda.gov/Food/LabelingNutrition/ucm281746.htm> [<https://perma.cc/37WZ-EZZ5>]; see also Tali Teeni Harari & Sharon Yadin, *Regulatory Literacy: Rethinking Television Rating in the New Media Age*, 88 UMKC L. REV. (forthcoming 2020) (framing educational activities by administrative agencies on the mechanisms of regulation as "regulatory literacy").

⁶⁹ See *Nutrition Education Resources & Materials*, *supra* note 9.

⁷⁰ See *id.*

regulatory mechanisms⁷¹—through various new digital methods. These skills, gained digitally, indirectly support regulation by shaming and praising based on old disclosure schemes.⁷²

B. *The Digital Leap of Administrative Regulation*

E-regulation, as defined and explored in the previous section, constitutes a new paradigm in administrative regulation, focused on digital regulatory information and public enforcement. Scholars working in the field of information and communication technologies (ICT) often discuss the “substitution effect” in technology, in which new devices replace old devices though the actions remain essentially the same.⁷³ For example, in the context of government, citizens used to fill out forms and send them to governmental agencies through regular mail using the postal service. Fax machines replaced mail, and today, email and online applications have become the primary technology for form submission to governmental agencies.⁷⁴ This type of communication goes both ways, as governments supply citizens and corporation with permits, licenses, and approval letters online in response to application forms submitted.⁷⁵ However, these e-government⁷⁶ technologies merely altered the medium by which the government interacts with the public and disseminates information.⁷⁷ Within the “substitution” paradigm, paper or other technologies are simply being digitized or substituted by an electronic interface.

By contrast, the technological capabilities available to regulators today are much more than a substitute for old mechanisms of information dissemination to the public. Far from being an example of the substitution effect, e-reg involves a shift to information-based and communication-based regulation that is substantially altered by technology. The characteristics of social media, mobile applications, interactive websites,

⁷¹ See Teeni Harari & Yadin, *supra* note 70 (defining regulatory literacy and applying the concept to television rating systems).

⁷² See discussion *infra* Part II.B.2.

⁷³ See, e.g., Finger & Pécoud, *supra* note 32, at 54-55 (discussing typology of NICT uses by the state).

⁷⁴ See *Government Forms, by Agency*, USA.GOV, <https://www.usa.gov/forms/a> [<https://perma.cc/5NMH-V4BK>].

⁷⁵ See *id.*

⁷⁶ See *supra* notes 19–20 and accompanying text.

⁷⁷ See Emefa Agawu, *What's Next for E-Government: Innovations in E-Government Through a Cybersecurity Lens*, 96 NEB. L. REV. 364, 364–65 (2017), <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=3120&context=nlr> [<https://perma.cc/ZJ2U-N38C>] (arguing that e-government is often used to enhance efficiency through digitizing existing services while leaving the essential governing function unchanged).

and big data platforms change not only the medium but the message itself.⁷⁸

Information-based regulation in the e-reg era, as opposed to regulation based on information disseminated via newspapers, press releases, and governmental reports, has become something entirely new. It generates new information based on digital information gathering and computations, affects the public very differently, in an immediate, visual, interactive, and effective way, and offers the public new ways to actively engage in information-based regulatory processes.

Unique e-reg features have the potential to create a substantial leap from previously discussed information-based regulatory approaches. Generally, all publications of corporate misbehavior have the potential to cause reputational damage to firms and induce public sanctioning through, for example, boycotts, verbal shaming, protests, and litigation.⁷⁹ Psychological research has shown that ethical and social transgressions by corporations (or CSR noncompliance, in legal and business jargon) instigate emotions such as contempt, anger, and disgust (the “hostility triad”) in consumers toward the transgressing firm.⁸⁰ Other studies have focused on positive consumer responses to corporate ethical behavior and have revealed a connection between CSR practices, consumer loyalty, positive company evaluation by consumers, and consumer identification with the company.⁸¹ E-reg qualities of immediacy, accuracy, directness, visualization, and accessibility may be able to enhance the intensity and frequency of both positive and negative feelings and attitudes of consumers and other stakeholders.

It therefore seems that e-reg can enable regulators to perform new governmental functions, based on the digital creation and delivery of regulatory information to the public, that do not have an equivalent in the nondigital regulatory world. This evolution in technology not only opens new means for regulators to harness the public to the regulatory task but

⁷⁸ See MARSHALL MCLUHAN, UNDERSTANDING MEDIA: THE EXTENSIONS OF MAN (1964) (presenting the idea that “the medium is the message,” meaning that the channel through which a message is transmitted is sometimes more important than the meaning or content of the message itself); see also MARSHALL MCLUHAN & QUENTIN FIORE, THE MEDIUM IS THE MESSAGE: AN INVENTORY OF EFFECTS (1967).

⁷⁹ See, e.g., Yadin, *supra* note 31, at 424 (discussing ways in which regulatory shaming practices can motivate the public to pressure corporations into good behavior).

⁸⁰ See Silvia Grappi et al., *Consumer Response to Corporate Irresponsible Behavior: Moral Emotions and Virtues*, 66 J. BUS. RES. 1814, 1815 (2013) (surveying the psychological literature on consumer negative responses to corporate misbehavior).

⁸¹ See, e.g., Longinos Marin et al., *The Role of Identity Salience in the Effects of Corporate Social Responsibility on Consumer Behavior*, 84 J. BUS. ETHICS 65 (2009); see also Tom J. Brown & Peter A. Dacin, *The Company and the Product: Corporate Associations and Consumer Product Responses*, 61 J. MARKETING. 68, 80 (1997); see also Paul F. Burke et al., *The Relative Impact of Corporate Reputation on Consumer Choice: Beyond a Halo Effect*, 34 J. MARKETING MGMT. 1227 (2018).

also forms a new regulatory strategy. This strategy—e-regulation—is built on an ongoing virtual process of continuous updates to the public by regulatory agencies on corporate activities, sophisticatedly presented, in a manner that can potentially change previous paradigms of the relationships between regulatory agencies, the public, and private companies.⁸²

II. REGULATORY STRATEGIES—PAST AND FUTURE

In his influential book, *The Tools of Government*, Christopher Hood suggested a model for thinking of government as a set of administrative tools, analogous to tools for carpentry or gardening, that aim for social control.⁸³ Building on that metaphor of physical tools, Hood emphasized the importance of distinguishing between hammering tools and digging tools, measuring tools and cutting tools, through the identification of broad classes.⁸⁴ This Part aims to outline, almost forty years after Hood's book was first published, the current governmental toolkit, with an emphasis on its regulatory roles.⁸⁵ The goal of this Article is to illuminate the distinct characteristics of e-regulation, based on a renewed typology of regulatory strategies that builds on regulatory strategies scholarship. In doing so, this Part provides a unique account of the creation and development of the regulatory state, from a tool-based legal perspective, to better understand the features of agency regulation in the digital age.

Three major modern shifts can be identified in this account, in terms of regulatory styles: (1) from punishment-based, state-centered “command-and-control” regulation to industry-based regulation that is built on consensus between the industry and the government; (2) from command-and-control to public-based regulation, a regulatory style that is often founded on information-sharing with the public; and, within the category of public-based regulation, (3) from old disclosure-of-information schemes to e-regulation.

⁸² See discussion *infra* Part III.

⁸³ See CHRISTOPHER HOOD, *THE TOOLS OF GOVERNMENT (PUBLIC POLICY AND POLITICS)* 2 (1983).

⁸⁴ See *id.* at 2-3.

⁸⁵ While Christopher Hood's book was updated in 2007 to address the digital age, substantial technological developments have transpired in the past ten or fifteen years since the book was written. For example, social media platforms, such as Facebook and Twitter, were only founded and gained popularity in the intervening period. See CHRISTOPHER C. HOOD & HELEN Z. MARGETTS, *THE TOOLS OF GOVERNMENT IN THE DIGITAL AGE* (2007); see also Sarah D. Davis, *Social Media Activity & the Workplace: Updating the Status of Social Media*, 39 OHIO N.U. L. REV. 359, 361 (2012) (discussing the history of social media platforms such as Facebook, MySpace, and Twitter). Hood's books on governmental activities were also written from a much broader perspective, of which regulatory processes were just one element.

Over the years, many scholars have suggested different typologies of regulatory strategies, tools, and mechanisms.⁸⁶ However, it appears that none of the prominent works that map and classify the regulatory methods of administrative agencies have portrayed these particular classes and shifts in regulatory styles or given any special attention to regulation through the internet in the age of social media, big data, mobile applications, and interactive web platforms.⁸⁷

The typology presented here is organized around three different loci of regulatory activity (the state, industry, and the public), and pertains only to methods in which administrative agencies are involved and take some form of an active role in the regulatory process. The suggested categories do not include mechanisms of regulatory governance in which civil society regulates markets without any state involvement.⁸⁸

The first category is state-centered regulation; the second is industry-centered regulation; the third is public-centered regulation. The focus of this Article will be on the third category and on the distinction that it will make within this class of strategies between old and new tools of public-based regulation. This Part will illuminate two main features of e-reg: the centrality of the public in the regulatory process, and e-reg's reliance on new technologies for information sharing and communication between the government and citizens.

It is important to note at this point that the three classes of regulation portrayed in this Part (state-centered, industry-centered, and public-

⁸⁶ See NEIL GUNNINGHAM & PETER GRABOSKY, *SMART REGULATION: DESIGNING ENVIRONMENTAL POLICY* (1998) (classifying regulatory tools of environmental protection to categories of command and control, self-regulation, voluntarism, education and information instruments, economic instruments, and free market); see also THE TOOLS OF GOVERNMENT: A GUIDE TO THE NEW GOVERNANCE 21, 26 (Lester M. Salamon ed., 2002) (classifying general policy tools, including regulation); see generally OGUS, *supra* note 15 (distinguishing between information regulation, general standards, specific standards, prior approvals, economic instruments, private regulation, public ownership, price control, and public franchise allocation); see also BRONWEN MORGAN & KAREN YEUNG, *AN INTRODUCTION TO LAW AND REGULATION: TEXT AND MATERIALS* (2007) (classifying regulatory instruments into groups of command, competition, consensus, communication, and code); see also ROBERT BALDWIN ET AL., *UNDERSTANDING REGULATION: THEORY, STRATEGY, AND PRACTICE* (2d ed. 2012) (differentiating between command and control, incentive-based regimes, market-harnessing controls, disclosure regulation, direct action and design solutions, rights and liabilities, and public compensation and social insurance schemes).

⁸⁷ While some works have recently started to address the issue of regulation in the information age through the prism of regulatory strategies, they are much narrower in scope, pertaining to specific fields in regulation, such as environment, and to specific disclosure mechanisms. See, e.g., Rónán Kennedy, *Rethinking Reflexive Law for the Information Age: Hybrid and Flexible Regulation by Disclosure*, 7 GEO. WASH. J. ENERGY & ENVTL. L. 124 (2016), <https://pdfs.semanticscholar.org/153a/8d44e9ea6b9d41ed33555d7a202fc271227a.pdf> [<https://perma.cc/5LGV-H85F>]. Kennedy also notes that the study of the intersection of ICT and legal and regulation scholarship has not yet gained sufficient attention in academia. See *id.* at 125.

⁸⁸ See, e.g., Sidney A. Shapiro & Randy Rabinowitz, *Voluntary Regulatory Compliance in Theory and Practice: The Case of OSHA*, 52 ADMIN. L. REV. 97, 99 (2000) (describing modes of voluntary industry self-regulation).

centered) do not preclude but rather complement one another. Moreover, a mix of strategies and different tools within these strategies can be found within a single regulatory regime.⁸⁹ Also, while some regulatory agencies have adopted all three types of regulatory intervention styles throughout their history, others still mostly rely on command and control (state-centered regulation). Therefore, this Part should not be read as applicable to every single agency, but as a broad depiction of developments and processes that have taken place and are still forming in the administrative regulatory world.

Furthermore, while this Part suggests a typology of regulatory strategies that is based not only on types of regulatory approaches but also on some chronological account, it should be noted that some forms of these strategies of regulation have always existed.⁹⁰ The descriptive theory portion of this Part should therefore be read not as a hard division between three stages of regulation, but rather as pointing to changes in emphasis in the regulatory craft that have taken place over the years.

A. *From Command and Control to Consensus and Cooperation*

1. State-Centered Command and Control

In 1887, the first independent regulatory agency in the United States, the Interstate Commerce Commission (ICC), was created.⁹¹ The ICC was given power by Congress to regulate freight and passenger transportation over the rail system to ensure that it was safe, economical, and efficient, mostly through rate controls backed by general investigative powers of alleged violations.⁹² It quickly became apparent that without hard enforcement powers, the agency would fail in its

⁸⁹ See, e.g., IAN AYRES & JOHN BRAITHWAITE, *RESPONSIVE REGULATION: TRANSCENDING THE DEREGULATION DEBATE* 21 (1992) (explaining that agencies need to strike a balance between the deterrence model and the compliance model); see also GUNNINGHAM & GRABOSKY, *supra* note 86, at 422–26 (discussing the importance of mixing regulatory instruments in the context of environmental protection).

⁹⁰ See, e.g., Jody Freeman & Daniel A. Farber, *Thirty-Fourth Annual Administrative Law Issue: Modular Environmental Regulation*, 54 *DUKE L.J.* 795, 820 (2005), <https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1243&context=dlj> [<https://perma.cc/Q65G-3X28>] (stating that sometimes command and control is infused with negotiation and accommodation to market limits); see also OMRI BEN-SHAHAR & CARL E. SCHNEIDER, *MORE THAN YOU WANTED TO KNOW: THE FAILURE OF MANDATED DISCLOSURE* 195 (2014) (“[M]andated disclosure has been with us for centuries.”).

⁹¹ See David Arnburg & Norman L. Eule, *Interstate Commerce Commission: A Critical Overview*, 41 *GEO. WASH. L. REV.* 759, 759 (1973); see also Giandomenico Majone, *The Rise of the Regulatory State in Europe*, 17 *W. EUROPEAN POL.* 77, 78 (1994) (describing the Interstate Commerce Act of 1887 as the starting point of American regulation).

⁹² See Bruce Wyman, *The Rise of the Interstate Commerce Commission*, 24 *YALE L.J.* 529, 532 (1915), <https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=2430&context=yilj> [<https://perma.cc/V835-Z55Q>]; see also Arnburg & Eule, *supra* note 91, at 759.

regulatory mission.⁹³ Consequently, the law was amended to make carriers in interstate commerce criminally responsible for violations.⁹⁴

Such coercive regulatory powers are mostly identified in regulatory scholarship as “command and control,” sometimes referred to as “classical” regulation.⁹⁵ The strategy of command and control involves state promulgation of legal rules that prohibit or demand certain corporate conduct.⁹⁶ Within this strategy, “commands,” such as laws and regulations, are backed by criminal or administrative sanctions⁹⁷ that aim to “control” corporate behavior through deterrence.⁹⁸ While usually associated with a one-size-fits-all approach,⁹⁹ command and control can also include licensing requirements for certain activities, which may set conditions for entry into a particular sector, as well as punitive sanctions to back those licensing requirements.¹⁰⁰ For example, facilities are limited to a certain level of air emissions of pollutants and are required to install appropriate technology to meet these pollution restrictions.¹⁰¹

While not without flaws, command and control is considered, to this day, the basis of any effective regulatory regime¹⁰² and the building block of the American regulatory state.¹⁰³ Generally, within the regulatory state model, rulemaking and enforcement by the Executive replaced taxation

⁹³ See Wyman, *supra* note 92, at 532–33.

⁹⁴ See *id.* at 533.

⁹⁵ See Neil Gunningham, *Enforcement and Compliance Strategies*, in THE OXFORD HANDBOOK OF REGULATION 120–21 (Robert Baldwin et al. eds., 2010).

⁹⁶ See MORGAN & YEUNG, *supra* note 86, at 80.

⁹⁷ Though many scholars identify command and control mainly with criminal law, this Article categorizes both criminal and punitive administrative sanctions designed for the deterrence of corporations from regulatory infringement as part of “command and control.” See OGUS, *supra* note 15, at 79–80 (discussing the closeness and similarities between criminal and administrative law in the context of regulatory offenses); see also MORGAN & YEUNG, *supra* note 86, at 80 (2007) (describing command-based regulation as prohibiting rules coupled with either civil or criminal coercive sanctions).

⁹⁸ See Gunningham, *supra* note 95, at 121; see also Darren Sinclair, *Self-Regulation Versus Command and Control? Beyond False Dichotomies*, 19 LAW & POL’Y 529, 534 (1997) (discussing command and control in environmental regulation); see also John Braithwaite et al., *An Enforcement Taxonomy of Regulatory Agencies*, 9 LAW & POL’Y 323, 323–24 (1987) (describing deterrence or sanctioning approaches to regulation as a penal response to regulatory violation and the application of punishment to corporate misconduct).

⁹⁹ See Jenny Job et al., *Culture Change in Three Taxation Administrations: From Command-and-Control to Responsive Regulation*, 29 LAW & POL’Y 84, 87 (2007), http://regnet.anu.edu.au/sites/default/files/publications/attachments/2015-05/Job-et-al_CultureChange_0.pdf [https://perma.cc/UH3M-HUAS].

¹⁰⁰ See OGUS, *supra* note 15, at 15; see also BALDWIN ET AL., *supra* note 86, at 106.

¹⁰¹ See Rena I. Steinzor, *Reinventing Environmental Regulation: The Dangerous Journey from Command to Self-Control*, 22 HARV. ENVTL. L. REV. 103, 104, 114 (1998).

¹⁰² The idea is well known from the seminal work by Ian Ayres and John Braithwaite on the enforcement pyramid. Within the enforcement pyramid model, regulators must have the power to punish in order for softer strategies to work. See AYRES & BRAITHWAITE, *supra* note 89, at 35–40.

¹⁰³ See Steinzor, *supra* note 101, at 103 (explaining command and control framework as the basis for most existing rules).

and spending as the primary governmental mode of action,¹⁰⁴ and the focus on dealing with socially harmful acts moved from the courts to administrative agencies.¹⁰⁵

It is difficult to pinpoint the period in which the American regulatory state was formed. Some scholars point to the end of the nineteenth century as the dawn of the American age of regulation, when both federal and state legislatures assumed an increasingly active lawmaking role.¹⁰⁶ Others point to later dates in administrative American history and emphasize the bloom of agency creation during the 1930s, when agencies such as the Federal Communications Commission (FCC) and the Securities and Exchange Commission (SEC) were formed,¹⁰⁷ and then again in the 1970s, when no fewer than twenty-one regulatory agencies were established, including OSHA and the EPA.¹⁰⁸ These agencies were not always given binding lawmaking or enforcement powers from the start, but over time, command and control had become the main *modus operandi* of the American regulatory state.¹⁰⁹

During the command-and-control period, law was made by administrative agencies through the promulgation of binding, general, and forward-looking rules of conduct, backed by punitive, coercive sanctions.¹¹⁰ Examples of prominent statutes that established command-and-control standards during the 1960s and 1970s include the Clean Air

¹⁰⁴ See Giandomenico Majone, *From the Positive to the Regulatory State: Causes and Consequences of Changes in the Mode of Governance*, 17 J. PUB. POL'Y 139, 139 (1997) (describing how rulemaking has replaced taxation and spending among European governments).

¹⁰⁵ See Edward L. Glaeser & Andrei Shleifer, *The Rise of the Regulatory State*, 41 J. ECON. LITERATURE 401, 407 (2003), https://scholar.harvard.edu/files/shleifer/files/rise_reg_state.pdf [<https://perma.cc/FXJ5-STFE>] (discussing how regulation replaced litigation in the United States at the end of the nineteenth century and the beginning of the twentieth century).

¹⁰⁶ See Abram Chayes, *How Does the Constitution Establish Justice?*, 101 HARV. L. REV. 1026, 1031 (1988), http://nja.nic.in/P-950_Reading_Material_5-NOV-15/1.How%20does%20Constitution%20establish%20Justice.pdf [<https://perma.cc/4RYX-CT3M>].

¹⁰⁷ See STEPHEN BREYER, REGULATION AND ITS REFORM 372–75 (1982) (listing the different agencies created during the 1930s to regulate prices, services, health, safety, and the environment).

¹⁰⁸ See CASS R. SUNSTEIN, AFTER THE RIGHTS REVOLUTION: RECONCEIVING THE REGULATORY STATE 242–43 (1990); see also BREYER, *supra* note 107, at 1 (discussing the proliferation of governmental bureaus and federal regulations during the 1970s).

¹⁰⁹ See Eric R. Claeys, *The Food and Drug Administration and the Command-and-Control Model of Regulation*, 49 ST. LOUIS U. L.J. 105, 110, 117–18 (2004) (pointing to changes in the regulatory styles of administrative agencies during the twentieth century, especially focusing on the FDA); see also Steinzor, *supra* note 101, at 107 (illustrating that during the 1980s and 1990s, the EPA had obtained massive command-and-control powers). This was also the case with the ICC, which was not a command-and-control agency from its creation. See *supra* notes 93–95 and accompanying text.

¹¹⁰ See Claeys, *supra* note 109, at 110.

Act,¹¹¹ the Occupational Safety and Health Act,¹¹² and the Federal Water Pollution Control Act.¹¹³

Command and control is characterized as “top-down” regulation,¹¹⁴ in which the state, through its administrative agencies and their coercive statutory powers, performs a central role in regulating private markets and industry sectors.¹¹⁵ Within this paradigm, the state controls all three stages of the regulatory craft: rulemaking, monitoring for compliance, and enforcement.¹¹⁶ The state also defines its mission statement (through Congress or the agencies themselves) and decides what to regulate, when to regulate, and how to regulate.

Despite the promise of effectiveness, speed, and legal certainty,¹¹⁷ in many industry sectors it became evident that command and control had dramatically failed to induce compliance and ensure the public interest.¹¹⁸ It was criticized as prescribing general industry-wide rules in a manner that lacked bureaucratic and substantial flexibility;¹¹⁹ as overly legalized, with a considerable number of legally binding rules; and as imposing high compliance costs on industry.¹²⁰ Command and control was also criticized as a highly confrontational strategy that created resentment within industry and encouraged litigation.¹²¹ Many balked at what they perceived as an aggressive intrusion of “big government” in the freedom

¹¹¹ 42 U.S.C. §§ 7401-7431 (2012), <https://www.govinfo.gov/content/pkg/USCODE-2017-title42/pdf/USCODE-2017-title42-chap85-subchapI-partA.pdf> [<https://perma.cc/5LLC-TEG9>].

¹¹² 29 U.S.C. § 651 (2012), <https://www.govinfo.gov/content/pkg/USCODE-2017-title29/pdf/USCODE-2017-title29-chap15-sec651.pdf> [<https://perma.cc/T294-BE6N>].

¹¹³ 33 U.S.C. §§ 1251-1387 (2012), <https://www.govinfo.gov/content/pkg/USCODE-2017-title33/pdf/USCODE-2017-title33-chap26.pdf> [<https://perma.cc/MR26-Q927>]; see Howard Latin, *Ideal Versus Real Regulatory Efficiency: Implementation of Uniform Standards and “Fine-Tuning” Regulatory Reforms*, 37 STAN. L. REV. 1267, 1267 (1985).

¹¹⁴ See, e.g., Christoph Knill & Andrea Lenschow, *Modes of Regulation in the Governance of the European Union: Towards a Comprehensive Evaluation*, in THE POLITICS OF REGULATION: INSTITUTIONS AND REGULATORY REFORMS FOR THE AGE OF GOVERNANCE 218 (Jacint Jordana & David Levi-Faur eds., 2004).

¹¹⁵ See, e.g., Richard B. Stewart, *Models for Environmental Regulation: Central Planning Versus Market-Based Approaches*, 19 B.C. ENVTL. AFF. L. REV. 547, 547 (1992), <https://lawdigitalcommons.bc.edu/cgi/viewcontent.cgi?article=1462&context=ealr> [<https://perma.cc/4EW6-G625>] (describing past regulatory styles of U.S. environmental regulation as central planning command and control).

¹¹⁶ See MORGAN & YEUNG, *supra* note 86, at 3.

¹¹⁷ See GUNNINGHAM & GRABOSKY, *supra* note 86, at 41–42.

¹¹⁸ See Timothy F. Malloy, *The Social Construction of Regulation: Lessons from the War Against Command and Control*, 58 BUFF. L. REV. 267, 290-91 (2010), <https://digitalcommons.law.buffalo.edu/cgi/viewcontent.cgi?article=4439&context=buffalolawreview> [<https://perma.cc/8T8T-ZZR4>] (describing common opinion in legal scholarship on the inefficacy of command and control).

¹¹⁹ See BALDWIN ET AL., *supra* note 86, at 106–11.

¹²⁰ See *id.*; see also GUNNINGHAM & GRABOSKY, *supra* note 86, at 46.

¹²¹ See generally EUGENE BARDACH & ROBERT A. KAGAN, *GOING BY THE BOOK* (2002); see also AYRES & BRAITHWAITE, *supra* note 89, at 88 (explaining that under command and control, OSHA and regulated employers were constantly fighting in the courts).

of markets and asserted that this inhibited competition and innovation.¹²² It was further considered a costly method of regulation for governments, entailing prolonged legal procedures and processes, such as criminal proceedings.¹²³ Finally, command and control created the problem of “creative compliance,” in which corporations strive to avoid the intention of the law without breaking the terms of the law.¹²⁴

2. Industry-Based Approaches

During the 1980s, disillusionment with command and control¹²⁵ led regulators to develop a different approach to regulation. Popular accounts in legal and economic scholarship describe a transition from command and control to market-based tools, building on examples such as emission trading,¹²⁶ taken from the field of environmental regulation.¹²⁷ The idea of market-based regulation is that the government facilitates schemes in which regulated entities operate according to market-based incentives, such as trading or taxing schemes.¹²⁸ Generally, market-based tools do not require the active involvement of the relevant agency with the regulated entity, as once established, they operate almost mechanically.¹²⁹

¹²² See Steinzor, *supra* note 101, at 107 (discussing the evolution in EPA styles of regulation from command and control to market-based tools); see also Sandra B. Zellmer, *The Virtues of “Command and Control” Regulation: Barring Exotic Species from Aquatic Ecosystems*, 2000 U. ILL. L. REV. 1233, 1256 (2000), https://scholarship.law.umt.edu/cgi/viewcontent.cgi?article=1166&context=faculty_lawreviews [https://perma.cc/H9EH-FSET] (surveying criticism of environmental command and control as inhibiting corporate innovation).

¹²³ See GUNNINGHAM & GRABOSKY, *supra* note 86, at 7; see also Yadin, *supra* note 31, at 435 (discussing the disadvantages of command-and-control sanctioning of corporations, especially monetary sanctioning).

¹²⁴ See BALDWIN ET AL., *supra* note 86, at 110.

¹²⁵ See Daniel H. Cole & Peter Z. Grossman, *When is Command-and-Control Efficient? Institutions, Technology, and the Comparative Efficiency of Alternative Regulatory Regimes for Environmental Protection*, 1999 WIS. L. REV. 887, 887 (1999), <https://www.repository.law.indiana.edu/cgi/viewcontent.cgi?article=1591&context=facpub> [https://perma.cc/ATU2-3HKY] (describing common criticism of command-and-control effectiveness in environmental regulation).

¹²⁶ Emission trading schemes allow a corporation to reduce its emissions below legal requirements and obtain a “credit,” which can be used by the corporation’s other facilities or sold to another corporation. See Richard H. Pildes & Cass R. Sunstein, *Reinventing the Regulatory State*, 62 U. CHI. L. REV. 1, 116-17 (1995), <https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=4851&context=uclev> [https://perma.cc/3GB4-WWNJ]; see also BALDWIN ET AL., *supra* note 86, at 195-97.

¹²⁷ See, e.g., BALDWIN ET AL., *supra* note 86; see also Pildes & Sunstein, *supra* note 126; see also Freeman & Farber, *supra* note 90.

¹²⁸ See Freeman & Farber, *supra* note 90, at 815-16 (discussing emission trading, effluent taxes, user fees, and deposit-refund systems in environmental regulation); see also Pildes & Sunstein, *supra* note 126, at 113-14 (discussing advantages of trading pollution rights systems and “green taxes”).

¹²⁹ See BALDWIN ET AL., *supra* note 86, at 111, 199 (explaining that emission trading and other incentive-based regimes do not involve close relations between regulators and corporations).

It is important to note, at this point, that the classification of tax schemes as a regulatory tool is highly controversial in regulation scholarship. While some scholars consider taxes and tariffs a prominent regulatory instrument,¹³⁰ others describe the regulatory state as fundamentally different from the positive state, which relies on taxing and spending.¹³¹ Therefore, while economic incentives can be considered “industry-based,” other tools might be a better fit with this category. These tools reflect a move from command and control to a paradigm of governmental cooperation and collaboration directly with the industry itself. Unlike tax schemes (which do not entail considerable interaction between administrative regulators and regulated entities), other industry-centered tools embody a collaborative strategy that employs a soft approach to regulation based on consensus building, direct negotiations, trust building, and direct knowledge sharing between administrative agencies and regulated entities.¹³²

Other than economic incentives, tools such as enforced self-regulation, regulatory contracts, beyond-compliance programs, and co-regulation can be regarded as industry-based.¹³³ Contrary to command and control, which is based on deterrence theory, industry-based approaches are based on compliance theory.¹³⁴ Instead of punishment, this style of regulation relies on softer tools that aim to encourage the regulated entities to comply.¹³⁵

The normative structure of industry-based regulation may be based on hard, formal legislation, or it may be based on soft, non-binding law. Industry-based schemes may encourage organizations to comply with legally binding norms, set in laws, rules, and regulations. They may also aim to encourage beyond-compliance behavior to achieve goals that are above and beyond what the legal rules prescribe, such as implementing

¹³⁰ See George Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3, 3-6 (1971).

¹³¹ See Majone, *supra* note 104, at 140-41, 148-52 (describing three main types of public intervention in the economy: income redistribution, macroeconomic stabilization, and market regulation, and differentiating between taxing and spending and rulemaking).

¹³² See Job et al., *supra* note 99, at 88 (discussing a move in the western world during the 1980s from command and control to “cooperative compliance,” which is based on persuasion, and “responsive regulation,” which is based on regulatory responsiveness to industry behavior); see also Mark Seidenfeld, *Empowering Stakeholders: Limits on Collaboration as the Basis for Flexible Regulation*, 41 WM. & MARY L. REV. 411, 411-12 (2000), <https://scholarship.law.wm.edu/cgi/viewcontent.cgi?article=1517&context=wmlr> [<https://perma.cc/72NT-BKE6>] (discussing collaborative regulation mechanisms, in which industry, as well as interest groups, partake in negotiated regulation schemes based in consensus).

¹³³ To my knowledge, these mechanisms were not previously discussed in regulation scholarship under a unified paradigm.

¹³⁴ See Albert J. Reiss, *Selecting Strategies of Social Control over Organizational Life*, in ENFORCING REGULATION 23, 23-26 (Keith Hawkins & John Thomas eds., 1984) (discussing deterrence versus compliance theories of regulation).

¹³⁵ See Braithwaite et al., *supra* note 98, at 324.

voluntary educational safety programs in the organization, reducing salt in food products, or formulating an ethics code for bank employees. Generally, the compliance approach has been depicted in regulation scholarship as focused more on preventing social harms than responding to violations after the fact.¹³⁶ In reality, though, compliance theory also enables the resolution of regulatory violations after the fact in amicable ways, through negotiation, dialogue, and agreements. Also, despite its name, compliance theory may successfully serve beyond-compliance goals.

Various regulatory strategies can be considered to be based on cooperation and partnership between regulatory agencies and regulated corporations and other private organizations. This Article will discuss four main examples of such tools, but it is important to stress that this does not constitute a closed list.

The first example of an industry-based mechanism is enforced self-regulation. Enforced self-regulation means that administrative regulators require regulated corporations to write their own rules of conduct, under regulatory guidance, followed by individual rounds of regulatory comments and approvals to each corporation.¹³⁷ In general, the idea of self-regulation is that governmental regulators can harness the regulated industry itself to achieve better results than command and control.¹³⁸ It allows for management in private organizations to come up with tailor-made creative solutions to fit their own organization, under state supervision, and according to pre-set regulatory standards.¹³⁹

For example, banks can compose money laundering control plans that meet government goals in a manner that accommodates each bank's unique business characteristics and corporate culture.¹⁴⁰ The bank is then required to enforce that plan internally; failure to do so may result in agency enforcement action.¹⁴¹ Enforced self-regulation is also used in fields such as civil aviation, coal mining, and environmental protection.¹⁴² For example, the Mine Safety and Health Administration allows companies, per the provisions of the Mine Safety and Health Act

¹³⁶ See Reiss, *supra* note 134, at 23.

¹³⁷ See AYRES & BRAITHWAITE, *supra* note 89, at 6, 101.

¹³⁸ See generally Cary Coglianese & Evan Mendelson, *Meta-Regulation and Self-Regulation*, in THE OXFORD HANDBOOK ON REGULATION 146 (Robert Baldwin et al. eds., 2010); see also Anthony Ogus, *Rethinking Self-Regulation*, 15 OXFORD J. LEGAL STUD. 97 (1995); see also CHRISTINE PARKER, THE OPEN CORPORATION: EFFECTIVE SELF-REGULATION AND DEMOCRACY (2002).

¹³⁹ See John Braithwaite, *Following the Money Trail to What Destination? An Introduction to the Symposium*, 44 ALA. L. REV. 657, 664-65 (1993) (discussing the advantages of enforced self-regulation schemes).

¹⁴⁰ See *id.*

¹⁴¹ See *id.*

¹⁴² See AYRES & BRAITHWAITE, *supra* note 89, at 116-17.

of 1977, to submit company-specific plans that will meet mandatory safety standards, while the EPA requires corporations to write their own oil spillage rules, in accordance with agency guidelines.¹⁴³ Companies can use enforced self-regulation mechanisms to create effective reputation-enhancing policies when setting and achieving especially high social responsibility goals.

The second example of industry-based tools is regulatory contracts. A regulatory contract is a form of rulemaking and enforcement tailored to a specific corporation and is based on negotiations and consensus-building between the regulator and the corporation.¹⁴⁴ The regulatory contract doctrine, which was established in *United States v. Winstar Corp.*, enables governmental regulators and private entities to engage in an enforceable agreement that stipulates the terms under which the private entity can operate in the markets.¹⁴⁵

Regulatory contracts may include “beyond-compliance” obligations in exchange for regulatory leniency and exemptions.¹⁴⁶ For example, in *Winstar*, a deal was made between the Federal Home Loan Bank Board, the Federal Savings and Loan Insurance Corporation, and several banks, according to which the regulators would apply lenient capital requirements to banks willing to purchase failing banks in order to avoid financial crisis in the savings and loan industry.¹⁴⁷ In *Winstar*, each bank negotiated a tailor-made deal with the regulators, to be in force for the next twenty-five to forty years.¹⁴⁸ In another example, the SEC offered leniency in fines to corporations that violated SEC regulations, in exchange for which those corporations agreed to establish a corporate compliance program designed to detect and prevent violations of law by its staff, in cooperation with the Commission.¹⁴⁹

¹⁴³ See *id.*

¹⁴⁴ See Jody Freeman, *The Contracting State*, 28 FLA. ST. U. L. REV. 155, 191-94 (2000), <https://ir.law.fsu.edu/cgi/viewcontent.cgi?article=1660&context=lr> [<https://perma.cc/25BC-4VE4>] (describing regulatory negotiation as a contract-like instrument used to develop and implement regulations); see also David Dana & Susan P. Koniak, *Bargaining in the Shadow of Democracy*, 148 U. PA. L. REV. 473, 475 (1999), https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=3350&context=penn_law_review [<https://perma.cc/HTX9-3CVG>] (explaining regulation-for-performance contracts); see also ANDREW P. MORRIS ET AL., REGULATION BY LITIGATION 43-47 (2009) (discussing the public and agency perspectives of regulation-by-negotiation); see also Cristie L. Ford, *Toward a New Model for Securities Law Enforcement*, 57 ADMIN. L. REV. 757 (2005) (discussing the SEC’s “framework for cooperation” settlement protocol with regulated companies).

¹⁴⁵ *United States v. Winstar Corp.*, 518 U.S. 839 (1996).

¹⁴⁶ See, e.g., Freeman, *supra* note 144, at 189, 191-92, 194.

¹⁴⁷ See *id.* at 848.

¹⁴⁸ See *id.* at 846-48, 860-68.

¹⁴⁹ See Ford, *supra* note 144, at 784.

Regulatory contracts also play an important role in environmental regulation.¹⁵⁰ For example, the EPA signed an agreement with major producers of heavy-duty diesel engines used to power large trucks that set accelerated deadlines for achieving stricter emissions limitations.¹⁵¹ The industry agreed to new, stricter regulations to be set outside of formal EPA rulemaking in order to settle allegations that companies had been gaming EPA rules on emission levels by developing computerized engine controllers that could cheat the system.¹⁵²

While they may suffer from typical problems of industry-based cooperative methods, such as “regulatory capture,”¹⁵³ regulatory contracts provide speed and responsiveness to regulatory issues; enhance trust between the regulators and the regulated, as they require dialogue, negotiation, and consent; and offer flexibility via the development and use of creative, “out-of-the-box” standard-setting and enforcement schemes.¹⁵⁴ They are also tailor-made to the characteristics of specific regulatory issues and actors.¹⁵⁵ Most of all, regulatory contracts can

¹⁵⁰ See generally ENVIRONMENTAL CONTRACTS: COMPARATIVE APPROACHES TO REGULATORY INNOVATION IN UNITED STATES AND EUROPE (Eric W. Orts & Kurt Deketelaere eds., 2001) [hereinafter ENVIRONMENTAL CONTRACTS]; see also Daniel A. Farber, *Taking Slippage Seriously: Noncompliance and Creative Compliance in Environmental Law*, 23 HARV. ENVTL. L. REV. 297 (1999), <https://scholarship.law.berkeley.edu/cgi/viewcontent.cgi?article=1512&context=facpubs> [https://perma.cc/QTK6-9BYK]; see also David A. Dana, *The New “Contractarian” Paradigm in Environmental Regulation*, 2000 U. ILL. L. REV. 35 (2000).

¹⁵¹ See MORRISS ET AL., *supra* note 144, at 55-92; see also Bruce Yandle et al., *Regulation by Litigation: The EPA’s Regulation of Heavy-Duty Diesel Engines*, 56 ADMIN. L. REV. 403, 427 (2004), <https://scholarship.law.tamu.edu/cgi/viewcontent.cgi?article=1469&context=facscholar> [https://perma.cc/SYC8-UNBS].

¹⁵² See MORRISS ET AL., *supra* note 144, at 55-92; see also Andrew P. Morriss et al., *Choosing How to Regulate*, 29 HARV. ENVTL. L. REV. 179, 181-82 (2005), <https://scholarship.law.tamu.edu/cgi/viewcontent.cgi?article=1105&context=facscholar> [https://perma.cc/H4D5-AZQU].

¹⁵³ Regulatees may try to manipulate regulators to act in a way that will favor their private interests over the public interest. See, e.g., PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE IN REGULATION AND HOW TO LIMIT IT (Daniel Carpenter & David A. Moss eds., 2014) [hereinafter PREVENTING REGULATORY CAPTURE], <https://tobinproject.org/sites/tobinproject.org/files/assets/Introduction%20from%20Preventing%20Regulatory%20Capture.pdf> [https://perma.cc/9B35-WC3L]. This manipulation may take the form of unspoken offers of employment in the private sector, political backdoor deals, or exploitation of the dependence of public regulators on private expertise to misinform the regulators. See, e.g., *id.* These practices and behaviors are described and discussed in multidisciplinary regulation literature under the rubric of “regulatory capture theory.” See, e.g., *id.* “Regulatory capture” refers to situations in which regulators serve the industry’s private interests and not the public interest. See, e.g., *id.*; see also Dana & Koniak, *supra* note 144, at 499 (discussing that regulatory contracts may be overly lenient toward private entities and the corporate commitments tend to be trivial in comparison, due to capture).

¹⁵⁴ See, e.g., Sharon Yadin, *Israel’s Law & Regulation After the Gas Discoveries*, in REGULATION IN ISRAEL: VALUES, EFFECTIVENESS, METHODS (Eyal Tevet & Itzhak Galnoor eds., forthcoming 2020).

¹⁵⁵ See, e.g., Dana, *supra* note 150, at 35-37.

secure compliance, as well as beyond-compliance, in ways that best achieve the public interest.¹⁵⁶

A third example of industry-based regulatory tools is beyond-compliance programs, in which administrative agencies call for companies to commit to “above-and-beyond” performance. These programs are often based on ethical standards and voluntary norms of CSR that are co-authored by the industry and the regulator.¹⁵⁷ These voluntary regulatory programs tend to focus on reputational gains for companies, rather than direct regulatory benefits, though they are very closely related to regulatory contracts when leniency is exchanged for compliance or above-compliance with specific regulated entities. However, unlike regulatory contracts, which deal with specific regulatee-based standard-setting, monitoring, or enforcement, beyond-compliance programs are offered sector-wide, and they usually focus on performance and standards that are beyond what is required of companies by law, rather than on enforcement after a regulatory violation has taken place.¹⁵⁸

An example of beyond-compliance programs can be found in OSHA’s “cooperative programs,” which aim to encourage employers to adopt best practices for occupational safety, rather than adhering to minimal compliance with regulations, in order to prevent fatalities, injuries, and illnesses in the workplace.¹⁵⁹ One example of these cooperative programs, the Voluntary Protection Program (VPP), recognizes employers who have implemented effective safety and health management systems and who maintain injury and illness rates below national Bureau of Labor Statistics averages, awarding them rankings (“star,” “merit,” and “demonstration”) and exempting them from routine OSHA inspections.¹⁶⁰ While there has been some criticism of agency

¹⁵⁶ See, e.g., Freeman, *supra* note 144, at 207 (explaining how regulatory contracts advance above compliance norms); see also MORRIS ET AL., *supra* note 144, at 78-79 (arguing that regulation through litigation can achieve better environmental performance standards than command and control).

¹⁵⁷ See Cary Coglianese & Jennifer Nash, *Performance Track’s Postmortem: Lessons from the Rise and Fall of EPA’s “Flagship” Voluntary Program*, 38 HARV. ENVTL. L. REV. 1, 3-4 (2014), https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=2233&context=faculty_scholarship [<https://perma.cc/332U-WD9C>].

¹⁵⁸ See VOLUNTARY PROGRAMS: A CLUB THEORY PERSPECTIVE 1-2 (Matthew Potoski & Aseem Prakash eds., 2009) [hereinafter VOLUNTARY PROGRAMS]; see generally REALITY CHECK: THE NATURE AND PERFORMANCE OF VOLUNTARY ENVIRONMENTAL PROGRAMS IN THE UNITED STATES, EUROPE AND JAPAN (Richard D. Morgenstern & William A. Pizer eds., 2007) [hereinafter REALITY CHECK].

¹⁵⁹ See OSHA’s Cooperative Programs, U.S. DEP’T LABOR: OSHA, <https://www.osha.gov/cooperativeprograms> [<https://perma.cc/WBE8-AU33>]; see also Orly Lobel, *Interlocking Regulatory and Industrial Relations: The Governance of Workplace Safety*, 57 ADMIN. L. REV. 1071, 1104-08 (2005); see also *supra* notes 61-63 and accompanying text.

¹⁶⁰ See *Voluntary Protection Programs*, U.S. DEP’T LABOR: OSHA, <https://www.osha.gov/vpp/> [<https://perma.cc/R2BK-262R>]; see also Lobel, *supra* note 160, at 1105.

voluntary programs as being ineffective in achieving regulatory goals,¹⁶¹ they are considered by many to reduce safety risks, improve relationships between industry and agencies, improve productivity, and decrease costs.¹⁶²

Co-regulation schemes are a fourth example of industry-based regulation tools. These schemes establish industry-wide voluntary standards based on negotiation with industry associations, rather than with individual corporations.¹⁶³ Under co-regulatory schemes, rulemaking and enforcement are mostly in the hands of industry and professional associations, with some oversight and ratification by the government.¹⁶⁴ For example, the Telecommunications Act of 1996 required broadcasters, along with other stakeholders, to develop a form of regulation to classify and label programs according to their degree of suitability for children.¹⁶⁵ Participants in this process included representatives of the entertainment industry, such as the National Implementation Group, and representatives of television broadcasters, such as the National Association of Broadcasters.¹⁶⁶ The process was largely designed by industry stakeholders and was not dictated by Congress, though it was initiated by it.¹⁶⁷ Generally, co-regulation aims to make the resulting standards more feasible and more accepted by the industry,¹⁶⁸ reducing enforcement and compliance costs of command and control. When properly applied, co-regulation can potentially generate positive reputational gains for participating industries, giving them a

¹⁶¹ See generally Lobel, *supra* note 159.

¹⁶² See, e.g., *id.* at 1108 (discussing a government study that found that the OSHA voluntary programs reduce injury and illness rates and improve relationships with OSHA).

¹⁶³ See AYRES & BRAITHWAITE, *supra* note 89, at 102.

¹⁶⁴ See *id.* Interest groups that are not a part of an industry, such as parents' organizations and community representatives, may also take part in co-regulatory schemes. See *id.* Other schemes of regulation, such as negotiated rulemaking (reg-neg), may also depend on both corporate and public stakeholders. See, e.g., Peter H. Schuck & Steven Kochevar, *Reg Neg Redux: The Career of a Procedural Reform*, 15 THEORETICAL INQUIRIES L. 417, 425 (2014) (describing procedures of reg-neg, in which agencies may form a committee of stakeholders to negotiate an agreed-upon new rule).

¹⁶⁵ 47 U.S.C. § 303a (2012), <https://www.govinfo.gov/content/pkg/USCODE-2017-title47/pdf/USCODE-2017-title47-chap5-subchapIII-partI-sec303a.pdf> [<https://perma.cc/7FXZ-PUMB>]; see Michael J. Fucci, *Facing the Future: An Analysis of the Television Ratings System*, 6 UCLA ENT. L. REV. 1, 3-4 (1998), <https://escholarship.org/content/qt8hr3g8c1/qt8hr3g8c1.pdf> [<https://perma.cc/Z3CA-97L8>].

¹⁶⁶ See Fucci, *supra* note 165, at 4; see also Joel Timmer, *Television Violence and Industry Self-Regulation: The V-Chip, Television Program Ratings, and the TV Parental Guidelines Oversight Monitoring Board*, 18 COMM. L. & POL'Y 265, 271 (2013), <https://ecfsapi.fcc.gov/file/10319246349131/Timmer%20Article-Oversight%20Monitoring%20Board.pdf> [<https://perma.cc/6Q9K-EZQR>].

¹⁶⁷ See Fucci, *supra* note 165, at 9-10.

¹⁶⁸ See William McGeeveran, *Friending the Privacy Regulators*, 58 ARIZ. L. REV. 959, 980 (2016), https://scholarship.law.umn.edu/cgi/viewcontent.cgi?article=1627&context=faculty_articles [<https://perma.cc/H5EC-2P3L>] (discussing co-regulation in the context of privacy regulation).

public profile as taking responsibility for and being sympathetic to public risks and harms inherent to their activity.

B. *From Command and Control to Public-Based Regulation*

1. Public-Centered Regulation

Alongside the shift from command and control to industry-based approaches to regulation, another movement that can be identified within administrative agencies' regulatory strategies is that toward public-centered strategies. These strategies focus on the public performing a central role in agency regulatory processes, such as norm-setting, monitoring, and enforcement.¹⁶⁹ For example, public organizations can be incorporated into regulatory processes to perform leading roles in regulatory norm-shaping, through schemes such as negotiated rulemaking ("reg-neg")¹⁷⁰ and variations of co-regulation.¹⁷¹

Other forms of public-centered approaches focus on public monitoring and enforcement, mainly through information provided to the public. Probably the most familiar form of public-centered regulation is mandated disclosure, in which manufacturers and service providers are legally required to affirmatively reveal information about their products or services to the public.¹⁷² Disclosure regulation is used, for example, to require manufacturers to label food packages with nutritional information and cigarette packages with proper health warnings.¹⁷³

The main objective of disclosure regulation is to provide the public—including consumers, clients, users, employees, patients, and investors—with the information necessary to make an informed decision about a particular product or service offered in private markets and industry sectors.¹⁷⁴ This approach is based on the idea of advancing

¹⁶⁹ Public-centered regulation, like all other regulatory categories portrayed in this Article, relates to schemes in which the state is involved, not to situations in which regulatory governance is carried out solely by non-state actors. See sources cited *supra* note 88 and accompanying text. Public-centered regulation further addresses situations in which the public plays a central, not peripheral, role in the regulatory process. *Id.* Therefore, "notice and comment," which requires agencies to solicit public input on rules and regulations, is not categorized here as a public-based strategy. See generally Richard J. Pierce, *Rulemaking and the Administrative Procedure Act*, 32 TULSA L.J. 185, 186-87 (1996) (discussing notice and comment procedures), <https://digitalcommons.law.utulsa.edu/cgi/viewcontent.cgi?article=2073&context=tlr> [<https://perma.cc/63SW-L9QS>].

¹⁷⁰ See Schuck & Kochevar, *supra* note 164.

¹⁷¹ See *supra* notes 163-164 and accompanying text.

¹⁷² See BALDWIN ET AL., *supra* note 86, at 119.

¹⁷³ See, e.g., *id.*; see also Jack Gainey, *An Examination of Trans Fat Labeling: Splitting the Third & Ninth Circuit*, 23 WASH. & LEE J. C.R. & SOC. JUST. 461 (2017), <https://scholarlycommons.law.wlu.edu/cgi/viewcontent.cgi?article=1439&context=crsj> [<https://perma.cc/ZAZ5-D7LJ>]; see also Nathan Cortez, *Do Graphic Tobacco Warnings Violate the First Amendment?*, 64 HASTINGS L.J. 1467, 1468-69 (2013).

¹⁷⁴ See BALDWIN ET AL., *supra* note 86, at 119; see also BEN-SHAHAR & SCHNEIDER, *supra* note 90, at 3.

individuals' autonomy to decide whether, how, when, where, or how much to use a product or a service.¹⁷⁵ Thus, mandated disclosure is aimed at correcting a market failure of information asymmetries, for instance, between suppliers or producers and consumers.¹⁷⁶ The point of disclosure rules is to not only make sure that consumers receive the information they need to make an informed decision, but also to make them aware of any harms inherent in a product or a service, and to ensure that they are not misguided by false representations by companies.¹⁷⁷

Within the approach of mandated disclosure, regulatory agencies set rules that detail the ways and forms in which the information is to be disclosed by companies.¹⁷⁸ For example, various rules and regulations specify the colors and fonts of food labels and cigarette packages.¹⁷⁹ Mandated disclosure is subject to regulatory supervision and enforcement by administrative agencies, and corporations that do not follow disclosure rules may be subject to legal sanctions.¹⁸⁰

While it may appear to be similar to command and control, disclosure regulation does not dictate corporate prices, outputs, quotas, technology, or behavior; instead, it leaves the public with the choice of whether to avoid a product or service, based on information provided according to regulatory disclosure rules.¹⁸¹ Within this approach, the state does not set a specific behavioral standard for companies to follow, but simply lays down the procedural rules for information dissemination to the public.¹⁸² For example, the state does not limit the inclusion of sugar in food products but merely sets rules regarding how food companies should disclose sugar quantities on their packages.¹⁸³

While regulated companies and other entities have to follow the rules of disclosure, this approach is not industry-based, as the corporations do not themselves lead the enforcement of the norm nor its design.¹⁸⁴ Rather, disclosure regulation is a public-based regulatory

¹⁷⁵ See *id.* at 146-47.

¹⁷⁶ See, e.g., Julia Black, *The Role of Risk in Regulatory Processes*, in THE OXFORD HANDBOOK OF REGULATION 302, 308 (Robert Baldwin et al. eds., 2010).

¹⁷⁷ See BEN-SHAHAR & SCHNEIDER, *supra* note 90, at 29-30.

¹⁷⁸ See MORGAN & YEUNG, *supra* note 86, at 96.

¹⁷⁹ See, e.g., *FDA Unveils New Cigarette Health Warnings*, FDA (June 21, 2011), <https://wayback.archive-it.org/7993/20170722060842/https://www.fda.gov/ForConsumers/ConsumerUpdates/ucm259624.htm>.

¹⁸⁰ See MORGAN & YEUNG, *supra* note 86, at 97.

¹⁸¹ See BEN-SHAHAR & SCHNEIDER, *supra* note 90, at 4-5 (explaining that mandated disclosure is often associated with free markets and consumer autonomy).

¹⁸² See *id.* at 4-5, 7.

¹⁸³ See *Food Labeling & Nutrition*, FDA, <https://www.fda.gov/food/food-labeling-nutrition> [<https://perma.cc/S8CD-4CJX>] (last updated Oct. 25, 2019).

¹⁸⁴ Conversely, companies usually participate in the shaping of regulations through a “notice and comment” procedure. See, e.g., *FDA Rules and Regulations*, FDA, <https://www.fda.gov/>

strategy, in which the state facilitates the provision of information to the public, through legally binding rules, while the public acts as the “enforcer” of the norm.

Another goal of mandated disclosure is to deter companies from specific behaviors and encourage them to act in a more socially responsible manner out of fear of the adverse effects of disclosure.¹⁸⁵ From this perspective, enforcement based on mandated disclosure takes place through the public image and reputations of corporations, which are negatively or positively affected by the information disclosed.¹⁸⁶ These effects are intended to deter companies from supplying products and services that require adverse public disclosures and to softly motivate companies, without using direct legal commands, to change the product or service itself, as well as to design new, more socially responsible products and services.¹⁸⁷

2. From Old Disclosure to E-Regulation

Until not so long ago, disclosure schemes were employed mainly through one-shot, one-direction, one-dimension old media publications. Information relating to product content was physically placed on products, and service providers were obligated to share information with customers verbally or in writing.¹⁸⁸ Nevertheless, despite its promise and its popularity to this day among policymakers,¹⁸⁹ scholarly accounts suggest that mandated disclosure has not been successful.¹⁹⁰ It has been criticized as too complex to decipher, taking a long time for consumers to read and understand, unwanted by consumers, and costly to regulated companies, thus increasing consumer costs.¹⁹¹

However, recent years have seen a shift within the public-based class of regulatory strategies, from old disclosure mechanisms that focus on mandating corporations to provide consumers with details relating to the use of a product or service, to new methods in which regulators provide regulatory information to the public relating to the monitoring of corporate behavior and enforcement of corporate norms.¹⁹²

regulatory-information/fda-rules-and-regulations [https://perma.cc/8E7V-JKGV] (last updated May 7, 2019); *see generally* Pierce, *supra* note 170, at 186-87.

¹⁸⁵ *See* Cortez, *supra* note 33, at 5.

¹⁸⁶ *See* MORGAN & YEUNG, *supra* note 86, at 96-97.

¹⁸⁷ *See id.*

¹⁸⁸ *See generally* BEN-SHAHAR & SCHNEIDER, *supra* note 90.

¹⁸⁹ *See id.*

¹⁹⁰ *See id.*; *see also* Omri Ben-Shahar & Carl E. Schneider, *Coping with the Failure of Mandated Disclosure*, 11 JERUSALEM REV. LEGAL STUD. 83 (2015).

¹⁹¹ *See* BEN-SHAHAR & SCHNEIDER, *supra* note 90, at 1-13; *see also* sources cited *supra* note 66 and accompanying text.

¹⁹² While scholars sometimes include various types of information-based regulation approaches under the rubric of “mandated disclosure,” a typology of old disclosure schemes and new e-reg

E-regulation is gaining shape as a public-centered regulatory strategy in which the central enforcer of appropriate corporate conduct is neither the state nor the corporations, but rather the public. Generally, e-regulation allows the public to gain “regulatory” abilities through agency information sharing. Different from command and control, e-reg does not rely on punishment or hard-law state enforcement, though it is sometimes complementary to these or other regulatory strategies. While it can be anchored in statutes, it can also take place in the realm of soft law and agency initiatives that go beyond explicit statutory mandates.

While e-reg can be based on mandated disclosure schemes, this is not always the case, and regulators often gather the information intended for disclosure themselves or with the help of the public (such as in the case of user complaints).¹⁹³ E-reg also differs from old disclosure schemes in other important aspects: It focuses on regulatory information, which is published by regulatory agencies. E-reg can involve the publicizing of command-and-control actions taken against transgressing firms, and of industry-based arrangements (such as regulatory contracts, co-regulation, and self-regulation schemes and beyond-compliance programs). It can also involve the generation of new information not related to any other regulatory strategy, such as consumer surveys of banks and their ratings according to regulatory-generated scores.

Unlike old disclosure schemes, which use old media, e-reg means creating an online environment for consumers, as well as other public stakeholders, that is interactive, focused, approachable, accessible, updated, fast, cheap, continuous, organized, and processed. Moreover, unlike old disclosure mechanisms, e-reg does not necessarily relate to a specific product, but rather to a specific company, group of companies, or industry sector. For example, e-reg can tell consumers who are considering opening an account or taking out a loan how many complaints were filed against a specific bank in the last three years through online regulatory platforms that enable precise searches and are constantly updated. With e-reg, the public can not only compare regulatory data from many different companies (is this restaurant clean; is this workplace generally safe; does this bank treat its customers well—relative to other businesses), but it can also enjoy the benefits of a

schemes better serves to understand different agency tools that have different features and goals. See, e.g., BEN-SHAHAR & SCHNEIDER, *supra* note 90, at 3 (discussing Miranda, which obliges the police to read suspects their rights as mandated disclosure); see also Kristin Madison, *Health Care Quality Reporting: A Failed Form of Mandated Disclosure?*, 13 IND. HEALTH L. REV. 310, 312 (2016) (discussing the government’s release of hospital quality ratings as another form of mandated disclosure); see also SUNSTEIN, *supra* note 26, at 78 (differentiating between “summary disclosure,” provided at the point of purchase, and “full disclosure,” provided on the internet).

¹⁹³ See *supra* notes 6-8 and accompanying text.

processed, graphically clear output, based on information gathered by regulators on corporate behavior.

E-reg can also make sure, through social media operated by regulatory agencies, that users are notified about newly revealed dangers related to any product or service, indirectly affecting corporate reputation.¹⁹⁴ It can also help the public gain skills that relate to old disclosure and engage in online educational activities on agency websites—for example, that are focused on how to read and decipher disclosure labels—which may also generate indirect corporate reputational effects.¹⁹⁵ E-reg can therefore be coupled with and enhance old disclosure schemes.

Unlike old disclosure schemes, e-reg is multi-dimensional and based on new media. The virtual space in which e-reg operates is not only different in terms of “geography” (online versus offline), but also in terms of quality.¹⁹⁶ It does not merely offer new avenues for providing disclosure to the public, but rather it has created entirely new ideas, concepts, and styles of regulatory information and communication, constituting a new paradigm of regulatory relationships, roles, capabilities, and goals.

III. THE FUTURE OF THE REGULATORY STATE

E-reg marks a change in administrative, corporate, and public roles in the regulatory state, as well as in relationships between the state, its citizens, and regulated entities. This Part aims to explore how these roles and relationships change under e-reg and, specifically, to discuss how the administrative regulatory state is increasing its reliance on (1) information; (2) technology; (3) the public; and (4) corporate reputation. It also seeks to evaluate the possible implications for regulatory agencies.

A. *Information*

The expansion of regulatory approaches from mandated disclosure to e-regulation marks an increasing reliance on information dissemination by the modern regulatory state. Under these approaches to governmental regulation, information relating to corporate behavior is being utilized by administrative agencies to influence corporate conduct through public opinion. In the e-reg era, this information is becoming much greater in quantity, and much more sophisticated, multi-layered, and varied in types and sources. Information disclosed to consumers by companies under mandated disclosure rules is now being supplemented

¹⁹⁴ See sources cited *supra* note 64 and accompanying text.

¹⁹⁵ See *supra* notes 9, 68-71 and accompanying text.

¹⁹⁶ See sources cited *supra* note 78 and accompanying text.

with regulatory information that significantly changes the previous roles of information-sharing in the regulatory state. This includes information on regulatory tools, actions, and activities, as well as on corporate values, outputs, culture, and social responsibility. E-reg information (and its communication) changes both the scale and form of regulation-by-information. The ways in which information is now gathered and presented facilitate the constant creation of new information, such as through specific online searches, interactive maps, and big data tools.

Material created and disseminated by regulatory agencies through digital platforms—relating to inspection results, enforcement procedures, voluntary programs, regulatory contracts, corporate compliance, sector violations, co-regulation schemes, enforced self-regulation arrangements, consumer complaints, regulatory labels, and educational material—increases the overall availability of information on regulated activities and regulatory actions. Furthermore, in offering multiple possibilities for the presentation of information, e-reg adds new informational tools to the regulatory toolkit. Information sharing can therefore become a highly viable regulatory approach that can supplement or substitute alternative regulatory approaches. It can also enrich regulatory “enforcement pyramids,” which are built on tool diversity and gradations of severity.¹⁹⁷

As information sharing becomes a more prominent tool in the regulatory state, regulators will have to devise new informational skills relating to which information should be gathered, organized, presented, publicized, and updated in digital platforms, and how. For example, agencies (as well as legislators and courts) will have to consider whether to publish unverified information, such as information generated by users on complaint databases. They will also need to consider attaching disclaimers to various types of publications (such as “this information has not been verified,” or “this citation is not a final order”). As more and more information on corporate behavior is created and made available by regulators, agencies will also need to concentrate efforts on avoiding informational overload and on effectively harnessing the information to the regulatory process.

In a previous article,¹⁹⁸ I discussed the ways in which the FDA had failed to properly shape information posted on the agency’s website. In that case, the FDA posted the names of more than fifty leading branded pharmaceutical companies that allegedly tried to block competition from generic drug companies, exacerbating the serious problem of high drug

¹⁹⁷ See AYRES & BRAITHWAITE, *supra* note 89, at 35-40.

¹⁹⁸ See Yadin, *supra* note 4.

prices in the U.S.¹⁹⁹ But the agency's message was not properly constructed and therefore did not fulfill its regulatory potential.²⁰⁰

The FDA's list of companies was extremely uncommunicative in both the language used and in the ways in which the data had been processed, organized, and presented on the website.²⁰¹ Terms such as RLD, REMS, and ETASU were used in the FDA's list and its explanatory text, making it inaccessible to the general public, which is not fluent in pharmaceutical regulation terminology.²⁰² For a person from outside the pharma industry to understand the FDA's publication—which was intended for the general public, according to the agency itself²⁰³—would require reading and re-reading the full text of over two thousand words, as well as the data provided in a table.²⁰⁴ Even for those who could decipher the jargon used by the FDA to describe the condemned behavior of big pharma, the data itself was very confusing.²⁰⁵

Many other informational issues will soon occupy the regulatory state in this e-reg era, which marks the arrival of the digital information revolution to the regulatory state. For example, should agencies give regulated companies a chance to respond before an adverse publication is made, or will a delay in publication frustrate regulatory goals? Should companies be given a chance to correct a publication after the fact? How should data be presented in mobile big-data-based applications, and should private application developers be instructed on how to present regulatory information?²⁰⁶ Should agencies avoid blunt infographics and interactive platforms, as well as unflattering (and possibly misleading, in the eyes of the regulated) search engine results? Can companies request that agencies issue certain regulatory digital publications—either negative, relating to competitors, or positive, relating to their regulatory compliance?

These types of questions are now beginning to receive initial attention by legal scholars, who have focused on specific digital agency activities, such as online databases,²⁰⁷ website postings,²⁰⁸ and “smart disclosure” schemes, in which agencies release machine-readable

¹⁹⁹ *See id.* at 131-34, 139-40.

²⁰⁰ *See id.* at 140-42.

²⁰¹ *See id.*

²⁰² *See id.* at 141-42.

²⁰³ *See id.* at 134.

²⁰⁴ *See id.* at 142.

²⁰⁵ *See id.*

²⁰⁶ *See* Van Loo, *supra* note 34, at 1315 (examining public versus private “digital intermediaries,” which mediate information and advice on various corporate services and products to the public, for example via big-data-based applications).

²⁰⁷ *See* Cortez, *supra* note 33.

²⁰⁸ *See* Yadin, *supra* note 4, at 131.

datasets for public use through digital intermediaries.²⁰⁹ Although these studies have mostly centered on digital agency activities that aim to inform consumers in their decision-making processes, rather than to influence corporate behavior through soft regulation,²¹⁰ some of the suggested principles for digital governance of regulatory activities may apply to e-reg as well.

For instance, scholars such as O'Reilly, Cortez, and Van Loo argue for agencies to pursue "active data stewardship,"²¹¹ in which pre- and post-publication procedures are put in place to properly balance between the interests of business entities and the general public.²¹² While some agency publications are, in fact, already subject to such procedures—for example, the CPSC's and the CFPB's user complaint and violations databases²¹³—others, such as OSHA's tweets on corporate safety, lack procedural or substantive standards.²¹⁴

Generally, the federal executive enjoys broad discretion regarding its information policies.²¹⁵ Indeed, administrative law is not yet equipped to address such issues, but there is no doubt that the proliferation of e-reg among administrative agencies will require the shaping of appropriate normative frameworks.

E-reg activities should indeed be procedurally and substantially constrained due to possible damages to regulated entities, as well as due to the technological characteristics of modern ICTs, which can aggravate corporate damages.²¹⁶ A normative framework for e-regulation can theoretically be constructed within agencies, for example, through agency guidelines, or by the legislative branch, via amendments to the

²⁰⁹ See SUNSTEIN, *supra* note 26, at 97 (discussing "smart disclosure"); see also Van Loo, *supra* note 34, at 1315 (discussing disclosure through private and public digital intermediaries).

²¹⁰ But see Yadin, *supra* note 4, at 132-33 (discussing the "regulatory shaming" effect of the FDA's publication on its website).

²¹¹ See Cortez, *supra* note 33, at 71.

²¹² See James O'Reilly, *Libels on Government Websites: Exploring Remedies for Federal Internet Defamation*, 55 ADMIN. L. REV. 507, 534-35 (2003), <https://www.thecre.com/oira/wp-content/uploads/2015/03/OReilly.pdf> [<https://perma.cc/X5JP-BQUX>] (discussing pre- and post-publication mechanisms for the correction of information posted on government websites); see also Cortez, *supra* note 33, at 72 (discussing legal constraints—such as customer complaints—implemented for the regulation of online databases); see also Van Loo, *supra* note 34, at 1326 (recommending that the Administrative Procedure Act be amended to require that agencies solicit public input when coding unrestricted online applications).

²¹³ See Cortez, *supra* note 33, at 72-73.

²¹⁴ See, e.g., *id.* at 1429 (arguing that agencies should adopt policies to govern the use of social media for adverse publications on corporations).

²¹⁵ See Nathan Cortez, *Information Mischief under the Trump Administration*, 94 CHI.-KENT L. REV. 315, 316 (2019), <https://scholarship.kentlaw.iit.edu/cgi/viewcontent.cgi?article=4250&context=cklawreview> [<https://perma.cc/A7WY-W3JX>].

²¹⁶ See Cortez, *supra* note 33, at 1383.

Administrative Procedure Act,²¹⁷ special e-reg legislation, and even e-reg agency creation. E-reg court rulings offer another possible normative framework through which e-reg can evolve.

Out of these possibilities it seems that regulatory agencies are best suited and situated to govern e-reg practices, due to the political constraints inherent to legislation and the case-based, post-factum nature of the judicial branch, as well as to the agencies' advantages of expertise and speed.²¹⁸ The uniqueness of each regulated area, the dynamicity of technology, and the diversity of regulated industries mean that agency-based e-reg policies are more suitable than court-based or legislative-based policies.

While agency guidelines are therefore an important element of e-reg governance, industry-based approaches can also be useful in this regard. Building on the previous discussion addressed in this Article,²¹⁹ e-reg could also be governed by regulatory contracts, voluntary programs, or co-regulation schemes, in which specific regulators and industries reach a consensus on the appropriate boundaries, goals, and functions of e-reg, and create a collaborative framework that can reduce e-reg litigation and agency costs. Apprehensions relating to "regulatory capture,"²²⁰ in which industry would be able to manipulate the process of shaping e-reg rules in its favor, could be mitigated through public participation, using agency calls for public comments and contributions. Courts and legislatures can also play an important role in shaping e-reg practices. They can help enforce agency-based policy creation and implementation, and minimize the risk of a normative void due to agencies' neglect of the issue or unwillingness to set normative frameworks.

Increased information publication within the regulatory state also holds promise for increased transparency between the state, regulated industries, and the public. While it is not the primary goal of e-reg, providing citizens, consumers, investors, employees, and non-profit entities—as well as businesses and corporations, and even regulatory agencies—with regulatory information on corporate behavior allows all parties to better follow and closely monitor regulatory activities. Regulatory actions, such as enforcement procedures, inspections, sanctioning, mandated disclosure schemes, and beyond-compliance programs, can be made more transparent, thereby increasing government accountability and public trust, as well as curbing unfounded criticism of

²¹⁷ See 5 U.S.C. §§ 551-559, 561-570a (2012), <https://www.govinfo.gov/content/pkg/USCODE-2017-title5/pdf/USCODE-2017-title5-partI-chap5.pdf> [<https://perma.cc/73BZ-FYGR>].

²¹⁸ See generally Bendor & Yadin, *supra* note 12, at 383-84 (examining features of administrative agencies in the regulatory state).

²¹⁹ See discussion *supra* Part II.A.2.

²²⁰ See sources cited *supra* note 153 and accompanying text.

over- or under-regulation. For businesses, e-reg can foster regulatory stability and certainty—namely, by allowing regulated industries to be better informed about regulatory policies regarding command-and-control and beyond-compliance programs in specific areas. Finally, e-reg can help foster knowledge sharing between regulatory agencies, allowing agencies to learn from each other on regulatory techniques, successes, and failures.

B. *Technology*

The regulatory state is becoming more dependent on new technologies associated with the fourth industrial revolution,²²¹ such as digitalization, artificial intelligence, the internet of things, big data, autonomous machines, robotics, and machine learning.²²² The SEC uses algorithms to spot suspicious trading;²²³ OSHA uses drones to inspect worksites;²²⁴ the EPA uses a program to help predict toxicities of chemical compounds²²⁵ and sensors to track emission sources.²²⁶

In the context of agency publications and information-based regulation, communication and digital technologies such as social media, sophisticated agency websites, mobile phone applications, big data, and dynamic search engines are increasingly being harnessed for regulatory purposes.²²⁷ These ICTs enable regulators to convey information to the public in ways that were not previously possible, enhanced in speed, form, quantity, delivery capabilities, and interactivity, as well as to provide new, digitally-generated information.²²⁸

E-reg plays a vital role in fulfilling public expectations of the government to be modern, responsive, high-tech, and innovative. The adoption of new technologies is expected from the government by the public, which adopted ICT a long time ago and is now waiting for regulators to catch up. Scholars working on identifying and analyzing

²²¹ See SCHWAB, *supra* note 11.

²²² See, e.g., Coglianesse & Lehr, *supra* note 17; see also Peter Grabosky, *Beyond Responsive Regulation: The Expanding Role of Non-State Actors in the Regulatory Process*, 7 REG. & GOVERNANCE 114, 117-18 (2013); see also Yeung, *supra* note 18.

²²³ See Bolen, *supra* note 18; see also Lawrence G. Baxter, *Adaptive Financial Regulation and RegTech: A Concept Article on Realistic Protection for Victims of Bank Failures*, 66 DUKE L.J. 567, 601 (2016), <https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=3873&context=dlj> [<https://perma.cc/L6FX-64VU>] (discussing digital technologies harnessed by financial regulators).

²²⁴ See David Sparkman, *OSHA Now Using Drones to Inspect Employer Facilities*, EHSTODAY (Dec. 29, 2018), <https://www.ehstoday.com/osha/osha-now-using-drones-inspect-employer-facilities> [<https://perma.cc/2EPH-AYEZ>].

²²⁵ See Coglianesse & Lehr, *supra* note 17, at 1162.

²²⁶ See Daniel C. Esty, *Red Lights to Green Lights: From 20th Century Environmental Regulation to 21st Century Sustainability*, 47 ENVTL. L. 1, 45 (2017), https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=6186&context=fss_papers [<https://perma.cc/2ZA6-XHJT>].

²²⁷ See discussion *supra* Part I.A.

²²⁸ See discussion *supra* Part I.B.

regulatory failures emphasize that they can be manifested in the government's inability to fulfill public expectations,²²⁹ including in choosing effective methods to intervene in the markets.²³⁰ Low levels of agency responsiveness, transparency, and solicitation of public participation are also regarded as a type of regulatory failure.²³¹ E-reg has the ability to respond to all these expectations of administrative agencies in today's digital world and minimize such possible failures.

As the regulatory state is becoming digital, adopting e-reg across varied regulatory agencies in different fields of social and economic activities, relationships between the regulatory state and its citizens are bound to be transformed. The continuity, updatability, accessibility, interactivity, and dynamicity of e-reg can bring administrative agencies and the public closer together, as regulatory aspects of government become ever more present in citizens' lives.

People who were once unaware of what the EPA or the SEC do to restrain corporate misbehavior and improve citizens' lives can now receive online updates through various digital media platforms, including highly popular social media outlets. People who are interested in knowing more about a company, a product, or a service can now easily access governmental data, perform user-defined searches, and update this information regularly. The unique architecture of social media can even introduce the regulatory state to citizens who are not actively searching for regulatory information through notifications from other users. Developing and implementing applications of information technologies is not merely an optional improvement that regulatory agencies can choose to make to their regulatory strategies—it is what citizens expect of agencies today. Regulators who neglect to constantly develop e-reg skills, platforms, and policies will not only be left behind other, more digitized agencies, but will also be considered outdated, slow, and inefficient by the general public.

Social media communications, as well as other e-reg applications, can also help “humanize” the regulatory state and its administrative agencies, as they facilitate direct communication over platforms that are conventionally used for social communications.²³² User-complaint databases that are updated continuously based on user feedback and

²²⁹ See Barak Orbach, *What is Government Failure?*, 30 *YALE J. ON REG.* 44, 54 (2013), <http://162.144.71.194/~yalejreg/jopdfs/orbach-government-failure.pdf> [<https://perma.cc/R3QK-T3CA>] (discussing mismatches between the public's normative expectations of government).

²³⁰ See BALDWIN ET AL., *supra* note 85, at 70.

²³¹ See *id.* at 69; see also BREYER, *supra* note 107, at 3 (considering the public's inability to participate in the formulation of critical regulatory policies as a type of regulatory failure and a point of criticism).

²³² See sources cited *supra* note 85 and accompanying text.

regulatory examinations²³³ can make regulatory agencies appear more sensitive to consumer challenges and hardships. The overall image of government²³⁴ can therefore improve, based on interactive and dynamic digital platforms for agency-public communications. Regulatory agencies should bear in mind these possible positive effects of e-reg when developing their regulatory strategies for a specific industry or issue.

Today, regulation is generally measured and justified in terms of cost-benefit analysis.²³⁵ Agency adoption of new informational technologies as a regulatory tool may well prove to be attractive in terms of cost-benefit, due to its relatively low costs²³⁶—for example, a tweet costs nothing, at least not directly. Regulatory databases, websites, applications, and other online platforms are relatively simple to build and maintain, requiring only a small share of agencies' budgets. However, new technologies can also pose new challenges for regulatory agencies. These may include: finding the right balance between the government and citizens' free-speech rights on interactive platforms, such as social media²³⁷ and the online forums featured on government websites;²³⁸ devising fair, accurate, and effective policies for updating publications in the online dynamic environment of e-reg; and developing tools to measure, assess, and improve the effectiveness, costs, and benefits of e-reg technologies.

Many agencies currently operate an impressive variety of digital public communication platforms. For example, the FDA sends out email alerts to subscribers, provides RSS feeds, and maintains a Facebook page in both English and Spanish, a Pinterest page with dozens of infographics, more than 20 Twitter accounts, a blog, a YouTube channel, and a Flickr page, most of which are updated daily, even several times a day.²³⁹ Accordingly, one of the challenges facing agencies such as the FDA in

²³³ See *supra* notes 6-8.

²³⁴ An agency's public image and reputation is of central importance. See generally DANIEL P. CARPENTER, *THE FORGING OF BUREAUCRATIC AUTONOMY: REPUTATIONS, NETWORKS, AND POLICY INNOVATION IN EXECUTIVE AGENCIES, 1862-1928* (2001); see also Daniel P. Carpenter, *State Building through Reputation Building: Coalitions of Esteem and Program Innovation in the National Postal System, 1883-1913*, 14 *STUD. AM. POL. DEV.* 121 (2000); see also Sidney J. Levy, *The Public Image of Government Agencies*, 23 *PUB. ADMIN. REV.* 25 (1963).

²³⁵ See generally CASS R. SUNSTEIN, *THE COST-BENEFIT STATE: THE FUTURE OF REGULATORY PROTECTION* (2003); see also REGULATORY IMPACT ASSESSMENT: TOWARDS BETTER REGULATION? (Colin Kirkpatrick & David Parker eds., 2007).

²³⁶ See, e.g., Yadin, *supra* note 31, at 437.

²³⁷ See generally Alissa Ardito, *Social Media, Administrative Agencies, and the First Amendment*, 65 *ADMIN. L. REV.* 301 (2013), <https://www.acus.gov/sites/default/files/documents/Agencies,%20Social%20Media,%20First%20Amendment.pdf> [<https://perma.cc/93ME-G2FZ>].

²³⁸ See generally David S. Ardia, *Government Speech and Online Forums: First Amendment Limitations on Moderating Public Discourse on Government Websites*, 2010 *BYU L. REV.* 1981 (2010), <https://digitalcommons.law.byu.edu/cgi/viewcontent.cgi?article=2563&context=lawreview> [<https://perma.cc/948T-GPZA>].

²³⁹ See Yadin, *supra* note 4, at 144.

the e-reg era is choosing the appropriate media platform to communicate regulatory information. In making this decision, regulators must consider a number of factors, including the relevant audiences for the message and data, and the forms in which the data and message would best be delivered, as different informational features—text, graphics, interactivity, and updatability—each have a particular media outlet best suited to enhance their message.

These are some of the challenges that regulators—as well as legislators and the courts—will be forced to address as the digital regulatory state continues to evolve.

C. *The Public*

As this Article has shown, e-reg is essentially a public-based strategy,²⁴⁰ which relies on the public to enforce corporate norms, mainly through shaming and lauding effects.²⁴¹ E-regulation relates to ideas that have previously been described in both legal and regulatory scholarship as “new-governance regulation,”²⁴² “reflexive regulation,”²⁴³ “soft

²⁴⁰ See discussion *supra* Part II.B.2.

²⁴¹ See discussion *infra* Part III.D.

²⁴² See, e.g., David Levi-Faur, *From “Big Government” to “Big Governance”?*, in THE OXFORD HANDBOOK OF GOVERNANCE (David Levi-Faur ed., 2012); see also Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342, 373, 388–92 (2004), <https://scholarship.law.umn.edu/cgi/viewcontent.cgi?article=1662&context=mlr> [<https://perma.cc/9PGN-SF86>] (explaining that the governance model incorporates soft law, informal mechanisms, and non-state generated norms, based on engaging multiple actors in the regulatory process while allowing citizens to become active rather than passive actors); see also Parker, *supra* note 30, at 210 (explaining governance as networks of governmental and non-governmental entities that steer social and economic life); see also Colin Scott, *Regulation in the Age of Governance: The Rise of the Post-Regulatory State*, in THE POLITICS OF REGULATION: INSTITUTIONS AND REGULATORY REFORMS FOR THE AGE OF GOVERNANCE (Jacint Jordana & David Levi-Faur eds., 2004) (discussing “governance” as a central feature of the post-regulatory state, in which governing is not a state prerogative and state law is not a central instrument of regulation); see also Yair Sagy, *The Legacy of Social Darwinism: From Railroads to Reinvention of Regulation*, 11 GEO. J.L. & PUB. POL’Y 481, 525 (2013) (discussing government-stakeholder network strategies, in which civil society and business stakeholders are involved, as regulation-through-networking).

²⁴³ See Sagy, *supra* note 244, at 523 (explaining that reflexive regulation relates to information-disclosure mechanisms by promoting businesses’ internalization of desirable social goals); see also Kennedy, *supra* note 87, at 130 (proposing informational approaches to environmental regulation as a form of reflexive law); see also Eric W. Orts, *Reflexive Environmental Law*, 89 NW. U. L. REV. 1227 (1995); see also Eric W. Orts, *A Reflexive Model of Environmental Regulation*, 5 BUS. ETHICS Q. 779, 780 (1995), <https://www.law.uh.edu/faculty/thester/courses/Emerging%20Tech%202011/orts%20on%20reflexive%20environmental%20law.pdf> [<https://perma.cc/F22N-UWLC>] (explaining reflexive regulation as a legal theory that seeks to indirectly encourage self-reflecting and self-critical processes in institutions to improve performance).

law,”²⁴⁴ and “nudge.”²⁴⁵ Each of these theories highlights a particular element in a family of similar, but nevertheless distinct, regulatory tools that do not rely heavily on formal law or on the state. While these approaches may differ in labels and emphasis, they all promote similar ideas of light-touch, indirect regulation, based on institutions and actors situated outside the government. Within these approaches, the government facilitates processes in which actors—such as civil society organizations, interest groups, and other public stakeholders—can motivate corporations and other private organizations to achieve socially desirable outcomes. Most of these approaches also share a necessary foundation in gathering, processing, and distributing information between state and non-state actors.

Following the disappointments of previous public-based approaches to regulation, such as mandated-disclosure schemes and reg-neg,²⁴⁶ e-regulation has the potential to reinvent the public’s role in the regulatory state. The public is now able to participate in agency regulatory processes through digitized platforms, thereby becoming a new resource for the regulatory state. Thus, participants may include consumers, investors, employees, interest groups, non-profit organizations, commercial organizations, researchers, the media, creditors, politicians, patients, residents, and various other public members.

Unlike regulatory governance mechanisms that enable the public to independently govern corporate activities without state involvement—such as industry standards and codes of conduct, and other purely self-regulatory mechanisms—e-reg can help re-foster the relationship between the regulatory agency-based state and the public. Technological

²⁴⁴ Soft law instruments, such as guidance and circulars, allow agencies to shape corporate behavior, in matters arising both inside and outside of the agency’s formal mandate, without having to enforce legal regulation that necessitates the incorporation of elaborate procedural requirements. See Scott, *supra* note 242, at 29; see generally Jacob E. Gersen & Eric A. Posner, *Soft Law: Lessons from Congressional Practice*, 61 STAN. L. REV. 573 (2008), https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=11512&context=journal_articles [<https://perma.cc/8V9Y-VHU3>]; see also Louise G. Trubek, *New Governance and Soft Law in Health Care Reform*, 3 IND. HEALTH L. REV. 139 (2006), <http://journals.iupui.edu/index.php/ihlr/article/view/16468/16632> [<https://perma.cc/D3AS-HKBV>].

²⁴⁵ Nudging is defined as the gentle steering of people’s choices based on the specific ways in which information is presented. See RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* 229-51 (2009) (recommending the adoption of “libertarian paternalism”: a means by which private institutions and governments can help steer people’s choices, and thereby guide them, in a direction that will help improve their lives through choice architecture); see also Daniel E. Ho, *Fudging the Nudge: Information Disclosure and Restaurant Grading*, 122 YALE L.J. 574, 578-82 (2012), <https://www.yalelawjournal.org/article/fudging-the-nudge-information-disclosure-and-restaurant-grading> [<https://perma.cc/KH4B-9NQG>] (discussing targeted transparency and disclosure through restaurant sanitation grading and machine-readable data released by regulatory agencies to help inform consumers).

²⁴⁶ See discussion *supra* Part II.B.2.

features of the electronic regulatory state facilitate direct, continual, and quasi-intimate relationships between citizens and regulatory agencies. Regulatory information and updates can be posted on digital media and reach targeted audiences in a matter of seconds, allowing for regulatory messages to be highly friendly in shape, form, and tone. Regular, even continuous, updates of such information can reassure the public that regulatory agencies are constantly working to monitor and report corporate misbehavior. This reassurance will, in turn, induce mutual trust, cooperation, and effectiveness, as well as promote a renewed public appreciation for government employees—which will motivate public service personnel. A task-sharing relationship between user-citizens and online-posting-agencies is formed much more easily through today's digital media. Thus, the relationship between regulatory agencies and those who are dependent on their performance can be transformed into a form of partnership.

Indeed, the emergence of the e-regulatory state is leading to the formation of an unwritten agreement and a virtual partnership between regulatory personnel and concerned, engaged users. The essence of this agreement is that regulatory agencies will keep the public updated on corporate activities that are under regulation and will present the data in an appealing digital manner, while the public, having been exposed to the material shared by regulatory agencies, will then actively engage in some form of enforcement of norms. For example, customers will leave a bank that has, according to a regulatory database, been the subject of a large number of complaints and will recommend to friends and family that they do the same. Twitter users may retweet or like a regulatory shaming tweet or a regulatory recall tweet. They may also respond to the message with action in real or virtual life, such as starting an online discussion about a company that OSHA has named as risking its employees' health and safety or initiating a public protest. Conversely, positive public reactions are expected toward companies that are reported by regulators to be socially responsible and compliant with regulations.

The characteristics of e-regulation, which enable public responses to become the center of regulatory action instead of governmental sanctioning, can also induce trust between regulatory agencies and regulated entities. When regulators let the markets decide how to react to regulatory violations, and consumers can judge and reward socially responsible corporate actions, agency-industry confrontations can subside.

However, there are also notable dangers in privatizing the regulatory task and shifting the focus of regulatory responsibility from the government to the public, and these may pose serious obstacles to the legitimacy and effectiveness of e-reg. For example, the public may not

want or be able to take an active role in the regulatory process; it may expect the government to stringently enforce regulatory norms as a central part of its activities and responsibilities; and it may respond to e-regulation in ways that may cause more harm than good to the overall public interest.

Overly complicated, long, and frequent publications, postings, and media outlets may cause informational overload, impeding public participation in the regulatory process. Users of ICTs may ignore information that does not interest the public or that is not presented appropriately. Some informational platforms and publications may induce a disproportionate adverse public reaction, in a manner that can have a severe impact on a company's financial stability. Indeed, e-reg effects may spin out of control in the hands of the public, which is not constrained by administrative law as regulatory agencies are.

Against this backdrop, it is important for regulators to create mechanisms that will enable public and industry inputs on specific e-reg applications and, where appropriate, co-regulation and consensus in devising and applying e-reg. Furthermore, regulators should formulate mechanisms that can periodically assess the effectiveness of e-reg applications. These mechanisms for increased consensus and effectiveness in e-reg platforms can also strengthen the legitimacy of e-reg, especially when it is not anchored in specific statutory mandates.

Another problem to consider is that the public may view the agencies as failing in their duties, due to the pervasiveness of negative publications on corporate behavior compared with positive publications. Reports of polluting factories and manipulative pharmaceutical companies may enhance a negative public image of regulators, who can come across as weak and ineffective. Only concentrating on the negative performances of companies within e-reg may also hurt corporate-agency relationships. Regulators should therefore take care to incorporate more positive publications within their e-reg strategies, which currently seem to be dominated by publications of a negative hue.²⁴⁷

²⁴⁷ Although research has shown that, under some circumstances, negative regulatory announcements can be a useful tool, additional research is necessary to determine the effectiveness of positive agency publications. See Matthew S. Johnson, *Regulation by Shaming: Deterrence Effects of Publicizing Violations of Workplace Safety and Health Laws* (Working Paper, 2019), <https://drive.google.com/file/d/1HcKpGXZuFWNNLa1YTI0A4Hte1BiJabT-/view> [https://perma.cc/5ZR2-Q2NV] (proposing, through an economic analysis of OSHA's adverse press releases, that negative regulatory announcements have a reductive effect on the number of workplace injuries that occur at other places of business).

D. *Corporate Reputation*

E-reg aims to create reputational effects that may motivate companies to achieve desirable goals. It directly builds on previous studies that explored practices of agency publications of corporate behavior under the label of “regulatory shaming,” and which argued that this is a legitimate and effective regulatory tool.²⁴⁸ These “shaming” publications were regarded as justified based on their effectiveness and efficiency in achieving regulatory goals, as well as their democratic value, inherent in their reliance on public participation in the shaming process.²⁴⁹ It was further argued that since regulatory shaming does not affect regulated corporations in the same manner as it does individuals, who may be psychologically and emotionally affected by shaming, it can be considered a soft and proportional tool in comparison with other enforcement strategies, such as command and control.²⁵⁰

Similarly, the information gathered by regulatory agencies via e-regulation is aimed at influencing public perspectives. Good corporate behavior can be rewarded with positive regulatory publications, followed by positive public reactions and actions.²⁵¹ Bad corporate behavior may become the subject of negative agency publicity aimed at causing reputational harm and financial losses.²⁵² E-reg is therefore highly dependent on corporate sensitivities to their public image and their reputation, warranting increased focus by regulatory agencies on how to control and utilize corporate reputations for regulatory purposes.

Generally, corporate image is defined as the sum of functional qualities and psychological attributes that exist in the mind of the consumer.²⁵³ It is thus a subjective knowledge of a company or a product that takes years to cultivate.²⁵⁴ Corporate image and reputation are regarded by senior management today as critical corporate assets, directly linked to financial success.²⁵⁵ A more recent discussion in the literature on the corporate image relates to CSR, in which corporations are expected to develop “social consciousness” and to be held socially accountable for

²⁴⁸ See Yadin, *supra* note 31.

²⁴⁹ See *id.*

²⁵⁰ See *id.* at 411.

²⁵¹ See discussion *supra* Part I.A.1.

²⁵² See discussion *supra* Part I.A.1.

²⁵³ See Manto Gotsi & Alan M. Wilson, *Corporate Reputation: Seeking a Definition*, 6 CORP. COMMS.: AN INT’L J. 24, 25 (2001).

²⁵⁴ See *id.*

²⁵⁵ See generally Edmund R. Gray & John M. T. Balmer, *Managing Corporate Image and Corporate Reputation*, 31 LONG RANGE PLAN. 695 (1998); see also Peter W. Roberts & Grahame R. Dowling, *Corporate Reputation and Sustained Superior Financial Performance*, 23 STRATEGIC MGMT. J. 1077 (2002), <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.196.9579&rep=rep1&type=pdf> [<https://perma.cc/CC8S-J6YW>].

the consequences of their actions in a sphere more extensive than that covered by profit-and-loss statements.²⁵⁶

CSR is closely linked to corporate reputation among consumers.²⁵⁷ Specifically, consumers are more loyal to companies that demonstrate ethical behavior even when such behavior is not mandated by law.²⁵⁸ Consumers also tend to identify with companies that adopt socially responsible schemes and cultivate positive emotions toward such companies and their products.²⁵⁹ The converse is also true, as consumers develop negative emotions and attitudes toward companies that are considered immoral or unethical.²⁶⁰

While highly developed in marketing and management literature, corporate reputation has yet to receive sufficient attention in regulatory-legal studies.²⁶¹ Although forms of regulation by shaming are nothing new,²⁶² it is still an under-developed regulatory resource that administrative agencies can better utilize in the digital age.²⁶³ In light of the regulatory shift toward public-based strategies, and especially e-reg,²⁶⁴ legal and regulatory scholars, as well as regulatory agencies, should focus on better understanding corporate reputation as a regulatory tool.

Specifically, regulators who utilize public information databases, applications, notifications, and postings should devise processes to evaluate corporate and industry sensitivities to reputation.²⁶⁵ These mechanisms should address both pre- and post-publication assessments of effectiveness and efficiency. In this context, regulators will have to decide, for example, whether to aim at a company's reputation or its product's, and whether a company or an industry is at all sensitive to its public image.

²⁵⁶ See Carroll, *supra* note 29, at 270.

²⁵⁷ See *supra* notes 80-81 and accompanying text.

²⁵⁸ See *id.*

²⁵⁹ See *id.*

²⁶⁰ See *id.*

²⁶¹ But see Judith van Erp, *Reputational Sanctions in Private and Public Regulation*, 1 ERASMUS L. REV. 145 (2008), <https://core.ac.uk/download/pdf/18520438.pdf> [<https://perma.cc/TMH4-EQHC>] (explaining reputational regulation through the use of naming and shaming); see also Yadin, *supra* note 31 (explaining the justifications for the adoption of regulatory shaming practices).

²⁶² See Ernest Gellhorn, *Adverse Publicity by Administrative Agencies*, 86 HARV. L. REV. 1380 (1973) (discussing adverse publicity by administrative agencies that aim to inform, warn, sanction, and enforce).

²⁶³ See Yadin, *supra* note 1 (recommending possible alternative functions for regulatory shaming that could be adopted by OSHA to improve employee safety); see also Cortez, *supra* note 33 (arguing for stricter guidelines, judicial review, and congressional restraint of agencies' adverse publications).

²⁶⁴ See discussion *supra* Part II.B.

²⁶⁵ See Yadin, *supra* note 31, at 442 (suggesting that the connection between company size and reputational sensitivity to regulatory shaming should be explored further).

Indeed, the use of corporate reputation in administrative regulation can also be found in other approaches, such as old disclosure schemes. From this perspective, product labeling systems do not merely aim to aid consumers in choosing a product that is best suited to their current needs and preferences, but also to elicit public reactions to positive, as well as negative, product labels, and to change public perceptions and emotions toward the firm or the product. However, within e-reg, reputational effects play a much bigger role in the public-based, information-based regulatory process. Indeed, some e-reg applications—such as the publication of ratings, league tables, scores, or condemning tweets, as well as other naming and shaming practices—can be more reputation-oriented than others. Generally, however, it seems that e-reg allocates more regulatory resources toward corporate reputations and corporate relations with the public than ever before.

Against this background, it is important for agencies to take note of the command-and-control sanctioning features of e-reg, which may undermine agencies' relationships with regulated industries. Regulators should therefore try to shape e-reg policies, and regulatory strategies in general, in a manner that gives sufficient consideration to reputational effects. For example, combining command-and-control fines with condemning tweets may allow for regulators to lower the sums imposed. Similarly, regulatory contracts and above-compliance programs can incorporate a lesser degree of regulatory exemption, leniency, or benefit when coupled with lauding regulatory publication.

Administrative regulators should also notice the important role that corporate reputations can play in the CSR arena, which until recently was dominated mostly by non-state actors, such as the public, the media, non-profit organizations, and the companies themselves.²⁶⁶ Governmental regulators can enhance corporate commitment to socially responsible policies through public-based informational strategies such as e-regulation. Positive and negative agency publications on socially responsible corporate behavior can help bring about a shift from the traditional regulatory role of sanctioning based on legal infringements to a new regulatory role of encouraging companies to fulfill moral and ethical extra-legal social expectations. Digitally disseminating more information relating to firms' achievements through above-compliance voluntary programs, regulatory contracts, enforced self-regulation, and co-regulation may encourage firms to perform better and to cooperate with regulatory agencies. Therefore, when building a regulatory plan of action for specific issues and industries, regulators should consider,

²⁶⁶ See generally Branson, *supra* note 28; see also Carroll, *supra* note 29; see also Dahlsrud, *supra* note 30.

preferably in collaboration with public and industry representatives, employing CSR-enhancing e-reg tools.

CONCLUSION

E-regulation is nothing less than a revolution in the administrative state. Digital platforms through which agencies can communicate with the public are not only more efficient than previous media channels but represent a complete paradigm change. Downloadable datasets, interactive infographics, mobile applications, social media, and searchable informational platforms profoundly alter the stream of information and style of communication between agencies, industries, and the public. E-regulation is not just a new strategy for controlling corporate behavior; rather, it offers the possibility of a renewed and reconstructed relationship between agencies, companies, and citizens.

Under this new paradigm, four dimensions are gaining increasing importance for digitized governmental regulation: information, technology, the public, and corporate reputation. The e-regulation era does not at all imply a retreat by the regulatory state but rather an evolution, as it responds to changes in technology, markets, and public expectations. Based on the technological features associated with the fourth industrial revolution, agencies must assume new regulatory roles and utilize new resources and capabilities in order to succeed in fulfilling their important missions. The administrative agencies of the twenty-first century must acclimatize to the concept and ideas of e-regulation and understand its goals, functions, and applications. While not without its challenges, there is no doubt that this is the future of the regulatory state.