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Soft Law 2.0: An Agile and Effective Governance Approach for Artificial Intelligence

Gary E. Marchant* & Carlos Ignacio Gutierrez**

ABSTRACT

Artificial intelligence (AI) is the most transformative technology of our era, affecting every industry sector and aspect of our lives. While AI promises enormous benefits, some of which are already manifesting, AI also has the potential to create many risks and problems, some of which are already starting to appear. Traditional command-and-control government regulation, referred to as “hard law,” barely exists for AI, and following the pattern of other technologies, is likely to be adopted incrementally in a trickle that will extend over future decades. Thus, for now, and for the immediate future, AI will be primarily governed by “soft law,” which consists of a variety of instruments creating substantive expectations that are not directly enforceable by governments. The primary problem with soft law is that because it is not enforceable, there are doubts about its effectiveness. This article provides the results of a two-year study on how to make AI soft law more effective and credible. It first summarizes lessons from decades of soft law governance of other technologies, including biotechnology, nanotechnology, information and communication technologies, and environmental technology. Next it identifies, analyzes, and draws observations and insights from over 600 existing AI soft law programs. Finally, building on

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the previous two tasks, it proposes a new Soft Law 2.0 model that consists of a toolbox of thirteen different mechanisms that can be used to ensure that soft law measures are implemented as intended, which should help make AI soft law more effective and credible.

Introduction.....	376
I. Roles and Limitations.....	378
A. The Strengths and Weaknesses of Hard Law.....	378
B. Soft Law Governance.....	384
C. A Hybrid Governance Approach for the Future	390
II. The Current Landscape of AI Soft Law.....	393
Table 1: Categories of Implementation/Enforcement	
Mechanisms	396
A. Internal Levers	396
B. Internal Roles.....	398
C. External Levers.....	399
D. External Roles.....	400
III. Soft Law 2.0: A Toolbox.....	401
A. Corporate Ethics Committee.....	403
B. Supply Chain.....	405
C. Government Procurement	408
D. Auditing/Certification.....	410
E. Community Groups/Non-Governmental	
Organizations.....	412
F. Trade Associations	413
G. Professional Societies	415
H. Patent Licensing	416
I. Liability Insurers	419
J. Professional Journals	421
K. Government Pressure and Backstops	422
L. FTC Enforcement.....	423
M. Liability	424
IV. Conclusion	424

INTRODUCTION

Artificial Intelligence (AI) is being developed and applied at an accelerating pace across virtually every industry sector and societal activity. AI has the potential to provide untold benefits, but it is also already creating concerns relating to privacy, security, safety, bias, unfairness, liability, political interference,

democratic control, technological unemployment, and national security, among others. The optimal deployment of AI will require addressing these concerns to the satisfaction of the general public and policymakers.

Traditional governmental regulatory frameworks are ill-equipped to manage rapidly emerging technologies such as AI because of the fast pace of change, the broad diversity of applications and concerns, and the limited jurisdiction and expertise of regulatory agencies.¹ While government “hard law” regulation should and will surely play an important and growing role in the oversight of AI, “soft law” will also provide an essential and critical set of tools for managing these technologies. Soft law programs involve measures that create substantive expectations that are not directly enforceable by governments.² They can have a variety of forms and formats, such as codes of conduct, ethical statements, professional guidelines, statements of principles, certification programs, private standards, public-private partnerships, or voluntary programs. Already, hundreds of soft law programs for AI have been proposed or implemented.³

The critical shortcoming of soft law programs, however, is that because they are voluntary, some entities subject to such measures may not consent to or diligently comply with the soft law measures. This possibility in turn undermines public confidence in soft law.⁴ This lack of public trust has been further challenged by a series of recent self-regulatory governance failures by companies such as Facebook, Volkswagen and Boeing, resulting in widely publicized harms and a “techlash” against tech companies.⁵

1. Wendell Wallach & Gary Marchant, *Toward the Agile and Comprehensive International Governance of AI and Robotics*, 107 PROC. IEEE 505, 505 (2019).

2. Gary E. Marchant & Brad Allenby, *Soft Law: New Tools for Governing Emerging Technologies*, 73 BULL. ATOMIC SCIENTISTS 108, 108 (2017).

3. CARLOS IGNACIO GUTIERREZ & GARY MARCHANT, A GLOBAL PERSPECTIVE OF SOFT LAW PROGRAMS FOR THE GOVERNANCE OF ARTIFICIAL INTELLIGENCE (2021).

4. Public confidence and credibility is critical for AI soft law success. Craig E. Shank, *Credibility of Soft Law for Artificial Intelligence – Planning and Stakeholder Considerations*, IEEE TECH. & SOC’Y MAG., Dec. 2021, at 25, 25.

5. *Scandals Suggest Standards Have Slipped in Corporate America*, THE ECONOMIST (Apr. 4, 2019), <https://www.economist.com/business/2019/04/06/scandals-suggest-standards-have-slipped-in-corporate-america>.

Despite these setbacks and obstacles, soft law remains an essential tool for the successful governance of AI. The effectiveness and credibility of soft law measures can be enhanced by various indirect enforcement or assurance mechanisms that can incentivize entities to comply with them and build public confidence in their effectiveness.⁶ This paper identifies and evaluates a series of potential indirect enforcement measures for AI soft law. We coin the term Soft Law 2.0 to refer to the expansion of soft law beyond substantive requirements to also include processes for implementation and compliance assurance.

Part I describes the essential role that *both* government regulation and soft law will play in the governance of AI. Both types of measures have their limitations but also critical roles to play. For the foreseeable future, the governance of AI will be managed by an ever-evolving hybrid of government regulation and soft law. Part II provides an overview of current soft law approaches for AI, including measures for ensuring implementation and indirect enforcement, to the extent they exist. Finally, Part III describes and evaluates some indirect enforcement mechanisms for soft law that together create a toolbox that form the basis of Soft Law 2.0. This suite of indirect enforcement mechanisms can make soft law instruments both more effective and more credible.

I. THE ROLES AND LIMITATIONS OF HARD LAW AND SOFT LAW IN AI GOVERNANCE

The successful governance of AI will require a combination of both hard law and soft law to make useful contributions. The interaction of these measures will be a complex, complementary, evolving, and contested relationship.

A. THE STRENGTHS AND WEAKNESSES OF HARD LAW

The controversy over the relative roles of hard and soft law has been elevated by a series of scandals and disasters that have blemished, if not decimated, the public's trust in industry's

6. According to one empirical analysis of soft law, the empirical evidence demonstrates that "self-governance is feasible and effective," whereas "our understanding of whether it is normatively acceptable (legitimate) remains a work in progress." STEPHEN M. MAURER, SELF-GOVERNANCE IN SCIENCE 147 (2017) [hereinafter MAURER, SELF-GOVERNANCE].

ability to police itself. The examples are numerous and disturbing. They include Facebook's complicity in sharing personal data with Cambridge Analytica to manipulate Americans' voting behavior.⁷ Volkswagen's cheating on emissions testing to enable its diesel vehicles to emit higher pollution levels than permitted.⁸ Theranos' fabrication of results and public announcements to market a diagnostic test capability that did not exist.⁹ Boeing's failure to properly validate and ensure the safety of its 737 Max planes that resulted in two crashes and 346 deaths.¹⁰ Even Google's recent firing of a leading ethics researcher for planning to publish analyses that were not well-received by company management.¹¹

Each of these high-profile examples, along with others not listed, have collectively eroded the public's confidence and trust in industry's stewardship of emerging technologies and has led to a broad "teclash."¹² This teclash has in turn fueled a push for faster and further government regulation for technologies such as AI and a rejection of industry self-regulation and reliance on corporate ethics statements. Such government adoption of enforceable rules is what is known as hard law.

Traditional government regulation or hard law has many strengths and has an appropriate and necessary role to play in the governance of AI. The greatest strength of government regulation is its legal enforceability, backed by the power and resources of the government to investigate and prosecute

7. See Nicholas Confessore, *Cambridge Analytica and Facebook: The Scandal and the Fallout So Far*, N.Y. TIMES (Apr. 4, 2018), <https://www.nytimes.com/2018/04/04/us/politics/cambridge-analytica-scandal-fallout.html>.

8. Jack Ewing, *Prosecutors Target Ex-Audi Chief in First VW Emissions Trial*, N.Y. TIMES (Sept. 29, 2020), <https://www.nytimes.com/2020/09/29/business/Volkswagen-Audi-rupert-stadler-diesel.html>.

9. Erin Griffith, *Elizabeth Holmes Is Sentenced to More Than 11 Years for Fraud*, N.Y. TIMES (Nov. 18, 2022), <https://www.nytimes.com/2022/11/18/technology/elizabeth-holmes-sentence-theranos.html>.

10. Niraj Chokshi, *House Report Condemns Boeing and F.A.A. in 737 Max Disasters*, N.Y. TIMES (Sept. 16, 2020), <https://www.nytimes.com/2020/09/16/business/boeing-737-max-house-report.html>.

11. Cade Metz & Daisuke Wakabayashi, *Google Researcher Says She Was Fired Over Paper Highlighting Bias in A.I.*, N.Y. TIMES (Dec. 3, 2020, 6:01 PM), <https://www.nytimes.com/2020/12/03/technology/google-researcher-timnit-gebru.html>.

12. Darrell M. West, *Techlash Continues to Batter Technology Sector*, BROOKINGS (Apr. 2, 2021), <https://www.brookings.edu/blog/techtank/2021/04/02/teclash-continues-to-batter-technology-sector/>.

regulatory violations. Government regulation also tends to better reassure the public that a problem is being addressed. Appropriately targeted and tailored regulation to address specific, significant problems is therefore warranted, and several major companies involved in AI have recently called for the government to regulate specific problems such as some aspects of facial recognition.¹³

But governmental regulation is not a panacea, and it is naïve to assume that comprehensive regulation is feasible and could solve and eliminate all problems and concerns associated with AI. This is clearly not the case, as regulation is imperfect and often inadequate attention is given to the challenges and complexities of ex ante regulation.¹⁴ First of all, comprehensive regulation of AI is both infeasible and inadvisable. As a threshold matter, any regulation that purports to regulate all AI would need a bright-line definition that distinguishes AI applications that are subject to the regulation from non-AI software and products that are not regulated. The ambiguity and difficulty of precisely defining other emerging technologies such as nanotechnology have impeded or complicated regulation of those technologies,¹⁵ and similar difficulties would be expected with any attempt to comprehensively regulate AI.

13. Nicol Turner Lee & Caitlin Chin, *Police Surveillance and Facial Recognition: Why Data Privacy Is Imperative for Communities of Color*, BROOKINGS (Apr. 12, 2022), <https://www.brookings.edu/research/police-surveillance-and-facial-recognition-why-data-privacy-is-an-imperative-for-communities-of-color/>; Neil A. Chilson & Taylor D. Barkley, *The Two Faces of Facial Recognition Technology*, IEEE TECH. SOC'Y MAG., Dec. 2021, at 87, 89–90 (discussing issues such as bias and privacy implications).

14. William E. Kovacic & David A. Hyman, *Regulating Big Tech: Lessons from the FTC's Do Not Call Rule*, 26 VA. J.L. & TECH., Summer 2023, at 1, 4 (“[M]uch less attention [has been given] to the complexities of developing and implementing [ex ante regulation]”); DANIEL J. FIORINO, VOLUNTARY INITIATIVES, REGULATION, AND NANOTECHNOLOGY OVERSIGHT: CHARTING A PATH 16 (2010), <http://www.nanotechproject.tech/process/assets/files/8347/pen-19.pdf> [hereinafter FIORINO, VOLUNTARY INITIATIVES] (“Regulation requires that agencies have statutory authority, involves complex and time-consuming procedures, limits flexibility of agencies and firms and is implemented in the context of what often are adversarial and distrustful relationships.”).

15. See generally Martin Miernick et al., *Legal and Practical Challenges in Classifying Nanomaterials According to Regulatory Definitions*, 14 NATURE NANOTECHNOLOGY 208 (2019) (explaining the complexities of applying a regulatory scheme to nanomaterials); Gary E. Marchant, *What Is a Nanomaterial? There's No Good Definition—Which Makes It Difficult to Regulate*, SLATE (Sept. 22, 2016), <https://slate.com/technology/2016/09/the-difficulty-of-defining-nanomaterials.html>.

Moreover, AI presents a broad range of risks and concerns, ranging from safety to bias to unemployment, by products across many different industry sectors such as medical, automotive, and financial, the whole of which are beyond the jurisdiction of any single agency.¹⁶ Existing regulatory agencies often lack adequate technical staff and expertise to quickly regulate a new emerging technology.¹⁷ It is unlikely that legislatures will or should create a new AI regulatory agency to address this broad constellation of concerns across so many industry sectors.¹⁸

Another problem with comprehensive regulation is that it often creates an ever-expanding web of rules and requirements that ends up doing more harm than good. The history of regulation is littered with well-intentioned efforts to put in place comprehensive regulatory schemes for industries like trucking or aircraft that ended up being overly complicated and burdensome and were eventually rescinded with almost unanimous approval.¹⁹

Comprehensive regulation of an emerging technology in its early and formative stages of development, before risks and benefits are fully understood, can be particularly treacherous. An example is biotechnology, where burdensome regulations were put in place for all genetically modified (GM) products, before the risks and benefits of these products were well

16. See Subbarao Kambhampati, *Why Are Artificial Intelligence Systems Biased?*, THE HILL (July 12, 2020), <https://thehill.com/opinion/cybersecurity/506924-why-are-artificial-intelligence-systems-biased>; Dario Amodè et al., *Concrete Problems in AI Safety* 2–3 (July 25, 2016) (unpublished manuscript) (on file at arXiv); See also WORLD ECON. F., *AGILE REGULATION FOR THE FOURTH INDUSTRIAL REVOLUTION: A TOOL KIT FOR REGULATORS* 6 (2020), <https://www.weforum.org/about/agile-regulation-for-the-fourth-industrial-revolution-a-toolkit-for-regulators#> (“Regulators can struggle to respond to innovations whose implications lie partly outside their sectoral or geographical jurisdiction requiring coordination with others (the ‘coordination problem’).”).

17. Kovacic & Hynman, *supra* note 14, at 9 (“a regulator dealing with technologically dynamic sectors is likely to find it necessary to develop its own team of technologists to understand the affected sector”); FIORINO, *VOLUNTARY INITIATIVES*, *supra* note 14, at 29 (“As for resources, it is fair to say that regulators always are struggling with constraints, especially on emerging issues where the regulatory infrastructure is lagging.”).

18. Ryan Hagemann et al., *Soft Law for Hard Problems: The Governance of Emerging the Technologies in an Uncertain Future*, 17 *COLO. TECH. L.J.* 37, 47, 68 (2018).

19. See, e.g., Christine S. Wilson & Keith Klovers, *The Growing Nostalgia for Past Regulatory Misadventures and the Risk of Repeating These Mistakes with Big Tech*, 8 *J. ANTITRUST ENFT* 10 (2020).

understood. Every scientific authority has now concluded that GM products are as safe, if not safer, than their non-GM counterparts,²⁰ and yet biotechnology products are still subject to burdensome regulatory requirements that do not apply to non-GM equivalents.²¹ These additional regulatory requirements cost tens of millions of extra costs per product and delay those GM products by a decade or more.²² More importantly, the regulatory burden has foreclosed the market to all but commodity crops by large corporations, snuffing out promising innovations by smaller companies and university researchers, many of which had humanitarian purposes.²³

In fact, regulation can have anti-market and anti-small business effects, by creating regulatory entry barriers which only large corporations can overcome.²⁴ Regulators are often “captured” by regulated parties, in that the resulting regulatory programs are “designed and operated primarily for the [regulated entities] benefit.”²⁵ Regulation may have other

20. See, e.g., NAT'L ACADS. OF SCI., ENG'G & MED., GENETICALLY-ENGINEERED CROPS: PAST EXPERIENCE AND FUTURE PROSPECTS 19 (2016), <https://nap.nationalacademies.org/read/23395/chapter/1> (“On the basis of its detailed examination of comparisons between currently commercialized GE and non-GE foods in compositional analysis, acute and chronic animal-toxicity tests, long-term data on health of livestock fed GE foods, and epidemiological data, the committee concluded that no differences have been found that implicate a higher risk to human health safety from these GE foods than from their non-GE counterparts.”).

21. Alan McHughen, *A Critical Assessment of Regulatory Triggers for Products of Biotechnology: Product vs Process*, 7 GM CROPS & FOOD 125, 126–27 (2016); Gary E. Marchant & Yvonne A. Stevens, *A New Window of Opportunity to Reject Process-Based Biotechnology Regulation*, 6 GM CROPS & FOOD 233, 233–34 (2016).

22. See generally AGBIOINVESTOR, TIME AND COST TO DEVELOP A NEW GM TRAIT (2022), <https://croplife.org/wp-content/uploads/2022/05/AgbioInvestor-Trait-RD-Branded-Report-Final-20220512.pdf> (studying time and cost of discovery, development, and authorization of “a new plant biotechnology-derived trait.”).

23. COUNCIL FOR AGRIC. SCI. & TECH. (CAST), REGULATORY BARRIERS TO THE DEVELOPMENT OF INNOVATIVE AGRICULTURAL BIOTECHNOLOGY BY SMALL BUSINESSES AND UNIVERSITIES 10–11 (2018), https://www.cast-science.org/wp-content/uploads/2018/12/CAST_IP59_Biotech_Regs_CCE3A1D779985.pdf.

24. George Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3, 5 (1971). For example, before the FDA took first took serious regulatory action against direct-to-consumer (DTC) genetic health testing companies in 2013, there were over a dozen such companies in operation, but after the FDA regulatory crack-down only the largest such company, 23andMe, could afford the regulatory burdens of FDA-approved DTC genetic health tests.

25. *Id.* at 3. See also MAURER, SELF-GOVERNANCE, *supra* note 6, at 180.

socially disadvantageous effects, such as locking-in older and less beneficial technologies that get a regulatory free pass whereas better and newer technologies are deterred by burdensome and expensive requirements. Another systemic problem with regulation is the resistance of many policymakers to enact it, whether through lack of political will or an unwillingness to invest the necessary political capital and resources.²⁶ Policymakers are also often reluctant to support new regulations for fear they will eliminate jobs and harm international competitiveness.

Government regulation also faces an issue with incomplete compliance. Public agencies usually lack the resources to monitor all regulated entities and detect all or even most violations, and so depend primarily on deterrence and industry self-enforcement (similar to soft law). It is an open secret though that any complex facility or business is necessarily going to operate in violation of some of the complex web of regulations that apply to it.²⁷ Regulations are also limited in geographic scope to specific jurisdictions, even though technologies and markets typically extend beyond such borders.²⁸

But the biggest shortcoming of technology regulation is the so-called “pacing problem,” in which regulation is unable to keep pace with fast developing technologies.²⁹ The pacing problem has two elements. First, regulatory agencies are too slow to adopt regulations in the first instance.³⁰ There are numerous administrative requirements that an agency must comply with in promulgating a regulation, and these make enactment slow

26. Bryan Naylor, *Not Just Airplanes: Why the Government Often Lets Industry Regulate Itself*, NAT'L PUB. RADIO (Apr. 4, 2019, 5:01 AM), <https://www.npr.org/2019/04/04/709431845/faa-is-not-alone-in-allowing-industry-to-self-regulate>; Hagemann et al., *supra* note 18, at 69.

27. J. B. Ruhl & James Salzman, *Mozart and the Red Queen: The Problem of Regulatory Accretion in the Administrative State*, 91 GEO. L.J. 757, 792 (2003) (survey of regulatory lawyers found that companies are out of compliance two-thirds of the time).

28. MAURER, SELF-GOVERNANCE, *supra* note 6, at 180.

29. Gary E. Marchant, *The Growing Gap Between Emerging Technologies and the Law*, in THE GROWING GAP BETWEEN EMERGING TECHNOLOGIES AND LEGAL-ETHICAL OVERSIGHT: THE PACING PROBLEM 19, 22–23 (Gary E. Marchant et al. eds., 2011) [hereinafter Marchant, PACING]; WORLD ECON. F., *supra* note 16, at 6.

30. MAURER, SELF-GOVERNANCE, *supra* note 6, at 180 (government regulation is “expensive and slow”).

and expensive.³¹ The length of time it takes to promulgate a regulation has increased over the years, and regulatory agencies usually have stretched budgets these days that limit their resources and agility to adopt new regulations.³² The second prong of the pacing problem is inertia. Even if regulations are in place, they are infrequently updated, again because of the same bureaucratic requirements that deter adopting or amending regulations.³³ As a result, existing regulatory programs often become quickly outdated, especially for a rapidly moving technology like AI.

For all these reasons, government regulation of an emerging technology like AI will necessarily be limited and imperfect. This does not mean that some narrowly tailored regulation for specific problems will not be needed and appropriate. Indeed, as AI advances, specific and real problems with AI applications become clear, and the role of hard law in governing AI will likely gradually expand over time. But premature hard law regulation of AI could do more harm than good and unduly impede innovation in this important technology.

In his classic treatise on regulatory practice and theory, Stephen Breyer, before being elevated to the U.S. Supreme Court, recommended that regulation should only be the “weapon of last resort,” and used only when narrowly tailored to serious risks or societal problems.³⁴ For AI, this means that government regulation will be necessary but not sufficient for technology governance. In contrast, many of the calls for AI regulation fail to heed Justice Breyer’s considered advice and just assume that some unspecified broad AI regulation will magically solve all the AI problems. It won’t.

B. SOFT LAW GOVERNANCE

The major alternative (or complement) to hard law government regulation is soft law. Soft law includes but goes beyond industry self-regulation and consists of a variety of instruments including codes of conduct, ethical guidelines,

31. Hagemann et al., *supra* note 18, at 63–65, 104–06.

32. Marchant, *PACING*, *supra* note 29, at 168–69.

33. For example, the primary regulatory statute for electronic communications in the United States is the Electronic Communications Privacy Act (ECPA), which was enacted in 1986 before email, the world wide web, and smart phones even existed.

34. STEPHEN BREYER, *REGULATION AND ITS REFORM* 184–85 (1982).

private standards, voluntary programs, best practices, certification and auditing requirements, and private-public partnerships, among others. A soft law instrument is any measure that imposes substantive expectations that are not directly enforceable by government.³⁵

Like government regulation, soft law has its strengths and weaknesses. Some of the advantages are the informality and hence speed by which they can be adopted and revised, thus providing more agile governance, critical for a fast-moving technology like AI.³⁶ Soft law expands the scope of governance actors from just government (in the case of regulation) to any one or combination of government, industry, civil society organizations, think tanks, standard setting bodies, and other third parties.³⁷ As such, with soft law there need not just be one approach imposed from above by the relevant government agency, but rather can be a diverse set of different approaches and instruments that allow experimentation and experiential learning.³⁸ Soft law often involves a cooperative approach between stakeholders unlike the adversarial approach of government regulation.³⁹ It gives a greater role to the experts and innovative thinkers who often work outside government in industry, think tanks, academia, and the non-governmental organizations (NGOs).⁴⁰ Soft law can also provide a mechanism to try out various and multiple governance approaches, and those that are successful may sometimes be adopted eventually

35. Marchant & Allenby, *supra* note 2, at 108.

36. Kenneth W. Abbott et al., *Soft Law Oversight Mechanisms for Nanotechnology*, 52 JURIMETRICS J. 279, 301–02 (2012); Hagemann et al., *supra* note 18, at 63–65, 104–06; WORLD ECON. F., *supra* note 16, at 17 (“Soft law can be more easily updated to keep pace with technological change . . .”).

37. FIORINO, VOLUNTARY INITIATIVE, *supra* note 14, at 38.

38. Gary Marchant, “Soft Law” Governance of Artificial Intelligence, AI PULSE 4 (Jan. 25, 2019) [hereinafter Marchant, *AI Soft Law*], <https://escholarship.org/uc/item/0jq252ks>.

39. Hagemann et al., *supra* note 18, at 50–51; Wallach & Marchant, *supra* note 1, at 506; FIORINO, VOLUNTARY INITIATIVE, *supra* note 14, at 25.

40. WORLD ECON. F., *supra* note 16, at 33 (“The information asymmetry between businesses and regulators means that industry is typically better placed to manage the risks from technological innovation in a way that is most efficient and effective.”); MAURER, SELF-GOVERNANCE, *supra* note 6, at 179 (“Firms often possess uniquely valuable information about their internal operations, competitors’ activities, and the economic and technological feasibility of standards. NGOs may similarly know more about social needs and the private sector’s conduct on the ground.”).

into hard law government regulation.⁴¹ Finally, soft law is not limited to legal jurisdictions, so unlike government regulation it is inherently international.⁴²

But of course, soft law is not perfect either and has its own disadvantages. The biggest disadvantage is that it is not directly enforceable by government, and therefore compliance with soft law is likely to be incomplete.⁴³ Perhaps most disturbing, the “bad actors” in a given industry, the ones that most need to change their behavior, are probably least likely to comply with a soft law measure.⁴⁴ Meanwhile, the good actors who are most likely to be already acting responsibly will be the first to comply with the soft law requirements. In addition, because no authority usually has power to monitor and assess compliance, a company could publicly claim they are compliant with a soft law measure when they are not. Just like insincere or unfulfilled corporate promises about sustainability have been described as “green washing,”⁴⁵ weak and non-transparent industry claims of ethical self-governance of AI has been described as “ethics washing.”⁴⁶ This is particularly true for many soft law measures written in vague, general language that are susceptible to subjective and self-serving interpretations.⁴⁷

Another major limitation of soft law mechanisms is that the public is less likely to trust such measures specifically because their participation is voluntary rather than compulsory.⁴⁸

41. Gary E. Marchant et al., *Risk Management Principles for Nanotechnology*, 2 NANOETHICS 43, 43–60 (2008).

42. Abbott et al, *supra* note 36, at 302; WORLD ECON. F., *supra* note 16, at 36 (“[S]elf and co-regulation can support a more joined-up approach to regulation across regions and nations by embedding common rules across jurisdictions.”).

43. Marchant, *AI Soft Law*, *supra* note 38, at 4; FIORINO, VOLUNTARY INITIATIVE, *supra* note 14, at 39.

44. Jodi L. Short & Michael W. Toffel, *Making Self-Regulation More Than Merely Symbolic: The Critical Role of the Legal Environment*, 55 ADMIN. SCI. Q. 361, 387 (2010).

45. William S. Laufer, *Social Accountability and Corporate Greenwashing*, 43 J. BUS. ETHICS 253 (2003).

46. Karen Hao, *In 2020, Let's Stop AI Ethics-Washing and Actually Do Something*, TECH. REV. (Dec. 27, 2019), <https://www.technologyreview.com/2019/12/27/57/ai-ethics-washing-time-to-act/>.

47. Marchant, *AI Soft Law*, *supra* note 38, at 4.

48. Libby Maman et al., *Varieties of Regulatory Regimes and Their Effect on Citizens' Trust in Firms*, J. EUR. PUB. POL'Y, Oct. 2022, at 1 (empirical study finding that “citizens’ trust increases with the existence of a state regulator and decreases with self-regulatory regimes and deregulation”). See also Gary E.

Finally, because there is no single entity authorized to issue soft law measures, there can be a proliferation of such measures in any given technology field. While this attribute can be beneficial in letting 1,000 flowers bloom, it can also create uncertainty, confusion, and competition about which measures should apply.⁴⁹

A complexity with evaluating soft law programs is the difficulty in measuring their effectiveness. Most soft law programs do not have the reporting and compliance assurance requirements that traditional regulations do, so there may be less information available for empirical assessment. In addition, one of the important benefits of soft law programs is that they often create more collaborative and less adversarial relationships than regulation, which can provide some longer-term benefits that are almost impossible to objectively measure.

For example, the chemical industry's voluntary Responsible Care program was criticized by academic researchers for failing to reduce toxic emissions from participating company facilities relative to non-participating companies.⁵⁰ Yet, as the government official who monitored this program noted, such a single narrow criticism overlooked other important but harder to measure benefits of the voluntary program:

Relying on this one measure, however, ignores the broad range of behaviors that Responsible Care aims to improve, such as pollution prevention, accident prevention and community outreach. Central to the program's effectiveness was the network of resources, relationships and pressures that backed them up. They created a learning system of norms and practices and a useful model . . .⁵¹

Marchant & Kenneth W. Abbott, *International Harmonization of Nanotechnology Governance Through "Soft Law" Approaches*, 9 NANOTECHNOLOGY L. & BUS. 393, 398–99 (2013); Marchant & Allenby, *supra* note 2.

49. MAURER, SELF-GOVERNANCE, *supra* note 6, at 42–43 (describing “standards war” beyond competing soft law initiatives on DNA synthesis safeguards).

50. See, e.g., Andrew King & Michael Lenox, *Industry Self-Regulation Without Sanctions: The Chemical Industry's Responsible Care Program*, 43 ACAD. MGMT. J. 698 (2000); Neil Gunningham, *Environment, Self-Regulation, and the Chemical Industry: Assessing Responsible Care*, 17 L. & POL'Y 57 (1995).

51. FIORINO, VOLUNTARY INITIATIVE, *supra* note 14, at 20, 25. Madhu Khanna makes a similar argument for the broader benefits of the voluntary 33/50 program, including increased communications among firms on pollution reduction strategies, greater employee engagement, and increased awareness of pollution discharges and costs that could be avoided. Madhu Khanna, *The U.S. 33/50 Voluntary Program: Its Design and Effectiveness*, in REALITY

Soft law is not new to AI, and there is much that can be learned from historical applications of soft law across other technology domains. We recently commissioned four case studies by leading scholars in nanotechnology, life science, environmental regulation, and information and communication technologies, and asked them to evaluate examples where soft law was applied in their domains.⁵² The resulting four case studies provide a very insightful overview of the pros and cons of soft law in practice.⁵³ While the four case studies have been published separately,⁵⁴ we provide a few high-level overall observations here.

All four case studies identified examples where soft law succeeded and where it failed. So, right away, we can dismiss any general statements that soft law measures are either a panacea or fatally flawed as overly simplistic, and likely based more on ideology than evidence. The four case studies illustrate that soft law measures come in a variety of forms and designs, and that the success of any given soft law measure is highly context specific, depending greatly on cost and feasibility of compliance, incentives to comply, and consequences of refusing or failing to comply.⁵⁵

Fifteen other overall findings from the four case studies are:⁵⁶

1. One important incentive that helped make several soft law programs successful is the interest in avoiding government

CHECK: THE NATURE AND PERFORMANCE OF VOLUNTARY ENVIRONMENTAL PROGRAMS IN THE UNITED STATES, EUROPE AND JAPAN 15, 31 (Richards D. Morgenstern & William A. Pizer eds., 2007).

52. Gary Marchant et al., *Governing Emerging Technologies Through Soft Law: Lessons for Artificial Intelligence—An Introduction*, 61 JURIMETRICS 1, 1 (2020).

53. Carlos Ignacio Gutierrez et al., *Lessons for Artificial Intelligence from Historical Uses of Soft Law Governance—A Conclusion*, 61 JURIMETRICS 133 (2020).

54. See generally Cary Coglianese, *Environmental Soft Law as a Governance Strategy*, 61 JURIMETRICS (SPECIAL ISSUE) 1 (2021); Adam Thierer, *Soft Law in U.S. ICT Sectors: Four Case Studies*, 61 JURIMETRICS 79 (2021); Diana M. Bowman, *The Role of Soft Law in Governing Nanotechnologies*, 61 JURIMETRICS 53 (2020); Yvonne A. Stevens, *Soft Law Governance: A Historical Perspective from Life-Science Technologies*, 61 JURIMETRICS 121 (2021).

55. See also WORLD ECON. F., *supra* note 16, at 33 (“It is important to identify what incentives could help support responsible industry-led governance”).

56. Carlos Ignacio Gutierrez et al., *supra* note 53.

regulation.⁵⁷ This finding has two sides. For critics of soft law programs, it confirms the concern that soft law is simply a means to avoid government regulation. For supporters of soft law, it shows how the threat of hard law regulation can incentivize companies to conform to soft law programs that implement important government goals in a more agile, less expensive, and cooperative manner.⁵⁸

2. Soft law programs for which compliance can be useful in shielding against litigation (or non-compliance can be a liability sword) create incentives for companies to join.⁵⁹

3. Soft law programs that provide no benefits or impose onerous requirements on the target entities are unlikely to succeed.⁶⁰

4. Multi-stakeholder soft law initiatives or initiatives that include partnerships with non-governmental organizations are likely to create more public trust and good-faith implementation.⁶¹

5. Transparency in the development and implementation of soft law measures helps improve both trust and effectiveness.⁶²

6. Indirect enforcement mechanisms for soft law programs by entities such as liability insurers, professional journals, and the Federal Trade Commission can significantly strengthen soft law programs.⁶³

7. Certification and compliance auditing by credible third party entities can improve confidence in and effectiveness of soft law programs.⁶⁴

8. Building a continuously updating process into a soft law program increases its relevance and usefulness.⁶⁵

9. Soft law works best when it is addressing a specific, concrete concern or risk, with clear criteria for compliance.⁶⁶

57. See also FIORINO, VOLUNTARY INITIATIVE, *supra* note 14, at 15.

58. *Id.* at 25; Thierer, *supra* note 54, at 97; Coglianese, *supra* note 54, at 25.

59. Stevens, *supra* note 54, at 125.

60. Thierer, *supra* note 54, at 107; Bowman, *supra* note 54, at 69.

61. FIORINO, VOLUNTARY INITIATIVE, *supra* note 14, at 22–23; Bowman, *supra* note 54, at 62; Stevens, *supra* note 54, at 128.

62. See also MAURER, SELF-GOVERNANCE, *supra* note 6, at 12 (recounting Underwriters Laboratories efforts to make its soft law standard-setting more transparent to increase their credibility and value); Thierer, *supra* note 54, at 92.

63. See also WORLD ECON. F., *supra* note 16, at 34 (“[T]he threat of sanctions for non-compliance can positively impact the effectiveness and credibility of self-and co-regulation initiatives.”); Thierer, *supra* note 54, at 101; Stevens, *supra* note 54, at 128.

64. The chemical industry’s Responsible Care program was perceived as more effective and credible after it added a certification requirement by independent third-party auditors. FIORINO, VOLUNTARY INITIATIVE, *supra* note 14, at 20; Coglianese, *supra* note 54, at 26.

65. Coglianese, *supra* note 54, at 30.

66. Bowman, *supra* note 54, at 59–61.

10. Support from top management in an organization increases the likelihood of successful implementation of the soft law measure.⁶⁷

11. The international application of a soft law measure increases its utility and attractiveness.⁶⁸

12. The capability of rapid adoption of a soft law measure in response to a new or emerging concern is an important advantage of soft law.⁶⁹

13. Providing flexibility for different types and sizes of organizations is another positive value that makes soft law more attractive.⁷⁰

14. Giving companies greater flexibility to address a problem than would be possible with a hard law regulatory approach is another benefit of soft law programs.⁷¹

15. Providing a pathway for integrating soft law programs with existing or future hard law programs is another attribute of successful soft law programs.⁷²

For all these reasons, soft law has a central role to play in AI governance, and as discussed in the next section, is in fact the primary governance approach for AI at this time.

C. A HYBRID GOVERNANCE APPROACH FOR THE FUTURE

The current critical role of soft law for AI governance will no doubt continue into the future, although with hard law gradually playing a more significant role over time. A key question going forward will thus be which governance issues should be managed primarily by soft law, and which by hard law. This will not be a static equilibrium but will be a dynamic process as both technological progress and governance experience grow together.

There is now a growing consensus on the need for a hybrid approach that incorporates both hard and soft law to govern emerging technologies such as AI.⁷³ For example, the OECD has

67. See also FIORINO, VOLUNTARY INITIATIVE, *supra* note 14, at 21 (“Research suggests that [a soft law program] is most effective when top managers are committed to the system and it is integrated with other business activities.”); Bowman, *supra* note 54, at 61.

68. Stevens, *supra* note 54, at 126.

69. *Id.* at 122.

70. Coglianesi, *supra* note 54, at 27.

71. *Id.* at 30–31.

72. FIORINO, VOLUNTARY INITIATIVE, *supra* note 14, at 38 (feature of soft law programs is “(1) to inform and prepare the ground for regulation or (2) to complement existing and future regulatory capacities rather than to supplant them.”); Stevens, *supra* note 54, at 125; Coglianesi, *supra* note 54, at 49; Bowman, *supra* note 54, at 66.

73. A similar hybrid or “multi-pronged” approach was described for another emerging technology, nanotechnology, by Linda Breggin and Leslie Carothers

recently adopted recommendations to promote more “agile” governance that includes both types of governance.⁷⁴ The OECD recommendation calls on governments to promote, “where appropriate, governance arrangements such as voluntary standards and codes of practice to stimulate innovation and leverage the role that innovators can play in the governance of innovation.”⁷⁵ The document notes that “non-binding standards, by being easier to adopt and offering more flexibility in implementation, can help address the regulatory challenges raised by innovation.”⁷⁶ The document also notes the limitations of soft law approaches, however, including “potential underperformance,” and so recommends certain preconditions and precautions in relying upon non-binding soft law similar to some of those described above.⁷⁷ These include ensuring the alignment between business and governmental interests, ensuring a level playing field, acquiring “a precise understanding of the set of incentives that underpin participation in a voluntary regime,” and defining credible sanction mechanisms to prevent and address potential non-compliance.⁷⁸

Likewise, the World Economic Forum emphasizes the essential role of “soft law” in governing rapidly evolving emerging technologies such as AI. Specifically, they mention the need to constantly evolve governance in response to evolving technologies, in contrast to the “regulate and forget” paradigm of traditional government regulation.⁷⁹ The Forum concluded that “self- and co-regulation can be an important complement to

who argued such an approach “could include elements of regulatory and voluntary programs under existing environmental statutes; corporate stewardship; tort liability; federal, state, and local legislation; voluntary standards; disclosure; liability insurance; and international measures. Developing the optimal mix of these tools is a significant aspect of the governance challenge.” Linda K. Breggin & Leslie Carothers, *Governing Uncertainty: The Nanotechnology Environmental, Health, and Safety Challenge*, 31 COLUM. J. ENV'T L. 285, 310 (2006).

74. Org. for Econ. Coop. and Dev. [OECD], *Recommendation of the Council for Agile Regulatory Governance to Harness Innovation*, C/MIN(2021)23/FINAL (Oct. 6, 2021), <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0464>.

75. *Id.* at 14.

76. *Id.*

77. *Id.*

78. *Id.*

79. WORLD ECON. F., *supra* note 16, at 11–12.

a goal-based approach to regulation. Industry-led governance can be more accessible and less burdensome than regulation and ensure that actions to manage risks are designed and implemented by those who are best placed to do so.”⁸⁰

A hybrid mix of soft and hard law is sometimes referred to as “co-regulation” where both government and the private sector play relevant roles in the governance of a particular technology or problem.⁸¹ There are a variety of models for hard law/soft law co-governance of an issue, from government convening the designers of a soft law program,⁸² to government and industry tackling different aspects or applications of the technology,⁸³ to government endorsing or supporting a soft law program (perhaps through reduced regulatory burdens on participants in the soft law program),⁸⁴ to using soft laws as a “test bed” to try out new governance approaches that might be considered for subsequent regulation,⁸⁵ to government providing a regulatory “back stop” to induce greater participation, to a true partnership program.⁸⁶ Even the European Union’s landmark proposed regulation for AI, often heralded as the primary example of hard law regulation of AI, applies hard law to some AI applications

80. *Id.* at 36.

81. *Id.* at 33.

82. MAURER, SELF-GOVERNANCE, *supra* note 6, at 184–85.

83. For such a proposal, see Neil A. Chilson & Taylor D. Barkley, *The Two Faces of Facial Recognition Technology*, IEEE TECH. & SOC’Y MAG., Dec. 2021, at 87, 96 (proposing hard law approaches for government use of facial recognition technology, but soft law approaches for commercial uses).

84. WORLD ECON. F, *supra* note 16, at 34 (“For self-regulation initiatives, regulators may incentivize compliance by reducing the regulatory burden for businesses that choose to participate in the scheme (‘earned recognition’). Benefits may include reduced reporting or inspection requirements.”). For example, the National Highway Traffic Safety Administration (NHTSA) policy for cybersecurity of motor vehicles consists of “best practices” that incorporate industry voluntary standards. Cybersecurity Best Practices for the Safety of Modern Vehicles, 87 Fed. Reg. 55459, 55459 (Sept. 9, 2022).

85. Emile Loza de Siles, *Soft Law for Unbiased and Nondiscriminatory Artificial Intelligence*, 40 IEEE TECH. & SOC’Y MAG. 77, 78–79 (2021) (describing how NIST cybersecurity framework evolved from soft law to hard law). *See also* MAURER, SELF-GOVERNANCE, *supra* note 6, at 180 (supporting the notion that NIST cybersecurity framework evolved from soft to hard law).

86. The World Economic Forum identifies five different types of industry-government collaboration in soft law programs. WORLD ECON. F, *supra* note 16, at 33.

but soft law such as voluntary codes of conduct for other AI applications.⁸⁷

II. THE CURRENT LANDSCAPE OF AI SOFT LAW

The growing influence of AI in the decision-making of organizations and its effects (both positive and negative) on individuals and groups from all sectors of society has compelled governments, private sector firms, and non-profit organizations to consider innovative options in the management of this technology.⁸⁸ Government policymakers are slowly starting to move towards some hard law regulation of AI, but at least in the United States it is initially expected to be narrowly-focused and mostly procedural.⁸⁹ Soft law is not only a viable alternative that is capable of complementing or substituting for AI-centered regulation, but it has provided the primary governance mechanism for this technology to date, given the paucity of hard law regulation.⁹⁰ Whether by preferred choice or default, soft law appears to remain the primary mechanism for AI governance, at least for the near future.

Fortunately, there appears to be no shortage of AI soft law programs implemented or proposed.⁹¹ If anything, too many exist, making it hard to sort through them and know which should be given preference or priority. For instance, Jobin et al.⁹²

87. Ronit Justo-Hanani, *The Politics of Artificial Intelligence Regulation and Governance Reform in the European Union*, 55 POL'Y SCIS. 137, 140 (2022).

88. See generally Paulius Čerka, Jurgita Grigienė & Gintarė Sirbikytė, *Liability for Damages Caused by Artificial Intelligence*, 31 COMPUT. L. & SEC. REV. 376, 376–389 (2015); GREG ALLEN & TANIEL CHAN, *ARTIFICIAL INTELLIGENCE AND NATIONAL SECURITY* (2017).

89. In contrast, the European Union is in the process of adopting a more comprehensive regulation of AI known as the EU AI Act, which was proposed in 2021, is expected to be finalized in 2023, and will likely take effect in 2024. European Union, *The Artificial Intelligence Act*, <https://artificialintelligenceact.eu/>. This pending regulation takes a risk-based approach in which AI applications with unacceptable risks are prohibited, high-risk AI applications are regulated with hard law, and all other AI applications (which includes the majority of AI applications) are left to soft-law governance such as industry standards. *Id.*

90. An example of this soft law focus is the National Institute of Standards and Technology's (NIST) efforts to develop a voluntary risk management framework for AI. *AI Risk Management Framework*, NIST, <https://www.nist.gov/itl/ai-risk-management-framework> (last visited Feb. 18, 2023).

91. Marchant, *AI Soft Law*, *supra* note 38, at 5–11.

92. Anna Jobin et al., *The Global Landscape of AI Ethics Guidelines*, 1 NATURE MACH. INTEL. 389 (2019).

identified eighty-four AI ethical statements or guidelines, ranging from individual company codes of ethics (e.g., Google) to multi-governmental declarations (such as the OECD Principles on Artificial Intelligence⁹³ endorsed by 42 nations). The authors found convergence across these measures on five substantive ethical principles: transparency, justice and fairness, non-maleficence, responsibility, and privacy.⁹⁴

Similarly, AlgorithmWatch highlights over 160 AI soft law initiatives as of April 2020.⁹⁵ An analysis of these instruments finds a convergence on four key principles: “respect for human autonomy, prevention of harm, fairness, and explicability.”⁹⁶ Finally, the Principled Artificial Intelligence Project at the Berkman Klein Center at Harvard University mapped thirty-six AI soft law programs focused on ethics and human rights.⁹⁷ The team behind this project identified eight common themes in these soft law programs: accountability, fairness and nondiscrimination, human control of technology, privacy, professional responsibility, promotion of human values, safety and security, and transparency and explainability.⁹⁸

Most recently, Gutierrez et al. identified 634 soft law programs classified with up to 107 variables including: year published, type of entity that created or led the program, type of soft law, jurisdiction, influence, and cataloged a program’s text according to fifteen social themes and seventy-eight sub-themes.⁹⁹ This analysis had a cut-off date of Dec. 31, 2019, and

93. See generally *Artificial Intelligence*, OECD, <https://www.oecd.org/going-digital/ai/principles/> (last visited Feb. 18, 2023).

94. Jobin et al., *supra* note 92, at 391.

95. *AI Ethics Guidelines Global Inventory*, ALGORITHM WATCH (Apr. 2020), <https://inventory.algorithmwatch.org/about>.

96. Brent Mittelstadt, *Principles Alone Cannot Guarantee Ethical AI*, 1 NATURE MACH. INTEL. 501, 502 (2019).

97. See generally JESSICA FJELD ET AL., PRINCIPLED ARTIFICIAL INTELLIGENCE: MAPPING CONSENSUS IN ETHICAL AND RIGHTS-BASED APPROACHES TO PRINCIPLES FOR AI (2020) (The Principled Artificial Intelligence Project presents a way to compare guidance documents about AI to identify trends that will inform us about the future of AI).

98. *Id.* at 15.

99. *Soft-Law Governance of Artificial Intelligence: The Database*, ARIZ. STATE UNIV., <https://lsi.asulaw.org/softlaw/the-database/> (last visited Feb. 12, 2023) [hereinafter *The Database*]. See also Carlos Ignacio Gutierrez & Gary Marchant, *A Global Perspective of Soft Law Programs for the Governance of Artificial Intelligence*, ARIZ. STATE UNIV., May 2021, at 9 (explaining the organization of the results from the soft law project’s methodology).

many additional AI soft mechanisms have no doubt been adopted since that time.

Importantly, the analysis evaluated the existence of a mechanism to implement or enforce each of the 634 soft law programs. This analysis found that ~31% of the soft law programs in the database (196 programs) mention a mechanism to ensure or promote implementation or compliance.¹⁰⁰ In researching the publicly-available information on soft law implementation or enforcement mechanisms, a matrix of four categories of mechanisms was developed (see Table 1).¹⁰¹ One dimension of the matrix distinguished internal verses external mechanisms. **Internal** mechanisms are those whose operation depends completely on resources available within an organization. **External** mechanisms are the opposite and require the participation of entities that are outside of the organization. The other dimensions distinguished two categories of mechanisms – levers and roles. **Levers** represent the toolkit of actions available to implement or enforce a mechanism. Meanwhile, **roles** describe how individuals or groups are arranged to execute levers.

100. Carlos Ignacio Gutierrez, *Transitioning from Ideas to Action: Trends in the Enforcement of Soft Law for the Governance of Artificial Intelligence*, 2 IEEE TRANSACTIONS ON TECH. & SOC'Y 210, 211 (2021) (It is possible that some additional programs included some type of internal compliance or enforcement mechanism that was not publicly mentioned).

101. *Id.* at 210.

Table 1: Categories of Implementation/Enforcement Mechanisms

	Internal	External
Levers	<ul style="list-style-type: none"> • Training of employees • Design of procedures • Commitments • Indicators • Allocating a budget 	<ul style="list-style-type: none"> • Third party verification • Leverage
Roles	<ul style="list-style-type: none"> • Champions • Units • Committees 	<ul style="list-style-type: none"> • Board of Director committees • Ethics committees

The following paragraphs briefly describe each quadrant of Table X, the mechanisms within, and offer a case study of each.

A. INTERNAL LEVERS

This quadrant includes a variety of instruments available within an organization to implement or enforce a soft law measure. Operationally, one means of incenting compliance is through the education of employees. Offering training activities can take many shapes, but it is generally geared towards explaining the employer's position on AI or the behaviors considered to be ethically acceptable.¹⁰²

A different course of action is to design procedures that outline how AI-related tasks ought to be performed within an organization. Examples exist in the form of guidelines for

102. *Artificial Intelligence*, SAMSUNG RSCH., <https://research.samsung.com/artificial-intelligence> (last visited Dec. 15, 2020); Tom Moore, *Artificial Intelligence at AT&T: Our Guiding Principles*, AT&T (May 15, 2019), https://about.att.com/innovationblog/2019/05/our_guiding_principles.html; Verena Fulde, *Guidelines for Artificial Intelligence*, TELEKOM (May 11, 2018), <https://www.telekom.com/en/company/digital-responsibility/details/artificial-intelligence-ai-guideline-524366>.

conducting AI related R&D or standard operating procedures to manage the consequences of the technology.¹⁰³ Finally, the allocation of a budget embodies a concrete step that signals an organization's commitment towards achieving an objective. The database contains several examples of entities that devote millions of dollars to the implementation of AI-centric risk management strategies.¹⁰⁴

Outside of day-to-day operations, organizations attempt to enforce soft law programs and achieve AI objectives by setting goals that motivate action. One way to do so is to publicly commit to acting in a particular manner. In essence, an organization can signal expectations by placing their reputation on the line regarding how AI principles will guide the decision-making of their employees.¹⁰⁵ An alternative to commitments are indicators. These serve as a concrete goal post for tracking the status of a planned activity such as integrating AI in the processes of a public administration.¹⁰⁶

An example of such internal levels is General Electric's Commitments to stakeholders with regard to the company's AI activities. Specifically, in 2018, the healthcare division of GE published four principles on safety, trust, transparency, and bias to guide its use of AI in medical devices.¹⁰⁷ To reinforce the firm's dedication to these principles, they issued several public commitments that accomplished two objectives. They signaled the type of actions GE was willing to take and created a yardstick by which its stakeholders could hold the company accountable. The public commitments included:

103. SONY CORPORATION, AI ENGAGEMENT WITHIN SONY GROUP 1–3 (2021); *Business Principles and Policies*, TELEFÓNICA, <https://www.telefonica.com/en/web/responsible-business/our-commitments/ai-principles> (last visited Dec. 7, 2020).

104. *The Pan-Canadian AI Strategy*, CIFAR, <https://cifar.ca/ai/> (last visited Dec. 15, 2020); AUSTRIA FEDERAL MINISTRY OF TRANSPORT, INNOVATION & TECHNOLOGY, ACTION PLAN AUTOMATED DRIVING - EXECUTIVE SUMMARY JUNE 2016, at 3 (2016).

105. Sundar Pichai, *AI at Google: Our Principles*, GOOGLE (June 7, 2018), <https://www.blog.google/technology/ai/ai-principles/>; *NEC Group AI and Human Rights Principles*, NEC CORP. (Apr. 2019), <https://www.nec.com/en/press/201904/images/0201-01-01.pdf>.

106. *Digital Government Blueprint*, GOVTECH SINGAPORE, <https://www.tech.gov.sg/digital-government-blueprint/> (last visited Dec. 15, 2020).

107. Keith Bigelow, *GE Healthcare AI Principles*, GEN. ELEC. (Oct. 1, 2018), <https://www.gehealthcare.com/article/ethics-in-healthcare-arent-new-but-their-application-has-never-been-more-important/>.

- *Commitment to diversity*: Focusing on employing a diverse data science team, as well as procuring databases that reflect the diversity of the population under analysis.
- *Commitment to transparency*: Knowing the source of all data used in their analysis and making sure their processes are reproducible and traceable.
- *Commitment to partnerships*: Establishing relationships with academic, government, and non-profits to identify opportunities for improvement and develop future recommendations.

B. INTERNAL ROLES

Ultimately, individuals are responsible for the implementation or enforcement of soft law programs. Organizations can focus and maximize the role of the individual by creating a role denominated as “champions”. Specifically, these people were assigned to lead the compliance of an AI program, educate staff on the technology, or serve as a node for the coordination of initiatives.¹⁰⁸ A strong champion of a soft law program within an organization can make an enormous difference in its success and implementation.¹⁰⁹

At the group level, individuals can be arranged either into committees or units with a mission to promote soft law programs. Internal committees compile the expertise of representatives from distinct parts of the organization (e.g. upper management, legal team, technology, and human resources). In many cases, these bodies are convened on an ad-hoc basis to coordinate efforts related to the implementation of an AI soft law program or to update them based on current conditions.¹¹⁰ In rare cases, organizations decide to formalize the coordination of their soft law by creating permanent units dedicated to managing AI efforts.

108. *Thinking Ahead About AI Security and Privacy Protection: Protecting Personal Data & Advancing Technology Capabilities*, HUAWEI, https://www-file.huawei.com/-/media/CORPORATE/PDF/trust-center/Huawei_AI_Security_and_Privacy_Protection_White_Paper_en.pdf (last visited Dec. 15, 2020); *Tieto Strengthens Commitment to Ethical Use of AI*, TIETOEVRVY (Oct. 17, 2018), <https://www.tietoevry.com/en/newsroom/all-news-and-releases/press-releases/2018/10/tieto-strengthens-commitment-to-ethical-use-of-ai/>.

109. MAURER, SELF-GOVERNANCE, *supra* note 6, at 183 (Many soft law successes are due to “strongly committed personalities” in upper management.).

110. Corinna Machmeier, *SAP's Guiding Principles for Artificial Intelligence*, SAP (Sept. 18, 2018), <https://news.sap.com/2018/09/sap-guiding-principles-for-artificial-intelligence/>; *ELISA Ethical Principles for Artificial Intelligence*, ELISA, <https://corporate.elisa.com/attachment/content/ELISA-Ethical-principles-for-AI-EN.pdf> (last visited Dec. 15, 2020).

One example of such organizational structure is Microsoft's Office for Responsible AI and its AETHER Committee. Microsoft published six AI principles to guide the development and deployment of its AI products in 2018.¹¹¹ To manage the implementation of these ideals, the firm created two organizational structures. One of them is a unit denominated the Office of Responsible AI. It is responsible for "setting the company-wide rules for responsible AI through the implementation of our governance and public policy work."¹¹² The other is the AI, Ethics, and Effects in Engineering and Research (AETHER) committee, composed of senior staff from a variety of departments and whose main function is to "make recommendations on responsible AI issues, technologies, processes, and best practices."¹¹³

C. EXTERNAL LEVERS

Instruments in the external levers category emphasize a dynamic of compliance, where two entities interact for the purpose of verifying that guidelines are properly adhered to through third-party verification or using some sort of leverage to compel action by a target entity (e.g. suppliers or consumers).

At least three variants of the third-party verification relationship were found in the AI soft law database. First, there are standards. These instruments are mainly developed by standard setting organizations with the assistance of experts to generate technical norms for a particular field. Organizations interested in certifying their conformance with a standard pay for the services of a third-party to validate that the former correctly applied the requirements of the standard. The AI soft law database identified (by the end of 2019) a total of sixty standards in development or ready for implementation related to important issues within AI such as bias, privacy, and liability.¹¹⁴

111. *Responsible AI*, MICROSOFT, <https://www.microsoft.com/en-us/ai/responsible-ai?activetab=pivot1%3Aprimaryr6> (last visited Dec. 15, 2020).

112. *Putting Principles Into Practice at Microsoft*, MICROSOFT, <https://www.microsoft.com/en-us/ai/our-approach?activetab=pivot1:primaryr5> (last visited Dec. 15, 2020).

113. *Id.*

114. *The Database*, *supra* note 99; INT'L ORG. FOR STANDARDIZATION, ISO/TR 17427-8:2015: INTELLIGENT TRANSPORT SYSTEMS — COOPERATIVE ITS — PART 8: LIABILITY ASPECTS (2015), <https://www.iso.org/standard/66960.html>;

The second variant is in the form of labels and independent certifications managed by non-profits, professional associations, and governments. Although they function in a manner similar to that of standards, they are generally by an organization that seeks to promote a particular point of view or result. For instance, the Foundation for Responsible Robotics created a quality mark that invites entities to implement their view of trust and transparency in robotic products.¹¹⁵ Third, a number of professional associations related to AI require that their members report violations to their ethics code, not doing so can itself be deemed a violation.¹¹⁶

In addition to these three types of external third party verification mechanisms, organizations can also leverage their influence over others by generating incentives for complying with a soft law program. One example of this is Kogniz's Code of Conduct and its use to leverage ethical conduct by customers. Kogniz developed an AI code of conduct to emphasize its commitment to privacy and guarantee that their facial recognition products are implemented responsibly.¹¹⁷ This code highlights important restrictions on potential customers such as the prohibition on using their products to violate civil liberties or providing a government agency with access to the technology. In an effort to implement this code, Kogniz added a clause in its terms of sale that require all customers to abide by these conditions or face the termination of their business relationship.¹¹⁸

D. EXTERNAL ROLES

The only external role identified in the database were various types of committees with external individuals as

IEEE, P7006 - STANDARD FOR PERSONAL DATA ARTIFICIAL INTELLIGENCE (AI) AGENT (2017), <https://www.standict.eu/sites/default/files/2021-01/P7006.pdf>; IEEE, P7003 - ALGORITHMIC BIAS CONSIDERATIONS (2017), <https://standards.ieee.org/project/7003.html>.

115. *FRR Quality Mark for (AI Based) Robotics*, RESPONSIBLE ROBOTICS, <https://responsiblerobotics.org/quality-mark/> (last visited Dec. 15, 2020).

116. *AAAI Code of Professional Ethics and Conduct*, AAAI, <https://aaai.org/Conferences/code-of-ethics-and-conduct.php> (last visited Dec. 15, 2020); *ACM Code of Ethics and Professional Conduct*, ACM, <https://www.acm.org/code-of-ethics> (last visited Dec. 15, 2020).

117. *Code of Conduct*, KOGNIZ, <https://web.archive.org/web/20200614133201/https://www.kogniz.com/code-of-conduct> (last visited Feb. 18, 2023).

118. *Id.*

members. Programs that engage with external committees recognize that the experience and viewpoint of individuals that are unburdened by the day-to-day management of an organization can contribute significantly to the long-term viability of a program. In the private sector, these bodies are often in the shape of corporate board committees that counsel entities on how AI could affect the interests of shareholders in areas such as diversity, inclusion, and bias.¹¹⁹ The boards of research organizations and non-profits whose activities relate to AI are tasked with ensuring the sustainability and completion of these goals.¹²⁰ Some entities have also enacted or attempted to enact external ethics boards.¹²¹

An example of an influential government committee with members who are external is the Government of Estonia's use of an External Committee. The Estonian government tasked a group of multidisciplinary experts with several responsibilities over the implementation of the nation's AI strategy.¹²² This included activities such as developing a diagnostic to determine the role of the private sector in the country's AI ecosystem, creating an action plan for the document's objectives, and the responsibility of drafting law proposals related to AI.¹²³

III. SOFT LAW 2.0: A TOOLBOX FOR IMPROVING AI SOFT LAW

As previously stated, soft law's voluntary nature acts both as an important strength and weakness in this instrument's role in governing emerging technologies such as AI. Although it affords stakeholders the flexibility and agility to rapidly create

119. *Bias, AI Ethics and the HireVue Approach*, HIREVUE, <https://www.hirevue.com/why-hirevue/ai-ethics> (last visited Feb. 18, 2023).

120. *About OpenAI*, OPENAI, <https://openai.com/about/> (last visited Feb. 25, 2023); *About Us*, THE PARTNERSHIP ON AI, <https://www.partnershiponai.org/about/> (last visited Dec. 15, 2020).

121. See, e.g., Rick Smith, *Axon Committed to Listening and Learning so That We Can Fulfill Our Mission to Protect Life, Together*, AXON (June 5, 2022), <https://www.axon.com/news/technology/axon-committed-to-listening-and-learning>.

122. EST. MINISTRY OF ECON. AND COMMC'N, *Eesti tehisintellekti kasutuselevõtu eksperdirühma aruanne (Estonian Artificial Intelligence: Report of the Expert Group on Deployment)* (2019), https://www.riigikantselei.ee/sites/default/files/riigikantselei/strateegiaburoo/eesti_tehisintellekti_kasutuselevot_u_eksperdiruhma_aruanne.pdf (last visited Dec. 15, 2020).

123. *Id.*

and modify programs, it comes at the cost of eliminating a legal mandate to comply with them. In other words, soft law does not subject parties to any government enforcement consequences, such as a punishment or fine, if they avoid or ignore a program's requirements.¹²⁴

To be as fully effective and credible as it can be, soft law must address its fundamental weakness head on. Most of the efforts to date to adopt and implement AI soft law have focused on identifying the key substantive principles for the responsible development of AI. Principles are important, because they set the substantive goals that AI governance seeks to achieve. Without a focus on these goals, which is what soft law principles for responsible AI do, AI governance would be rudderless and unproductive. Soft law principles are therefore necessary, but not sufficient.¹²⁵ What is needed in addition are processes and mechanisms for successfully implementing the AI principles in order to address the fundamental weakness of soft law.¹²⁶ As discussed above, these incentives for implementation often are

124. Although as one major study of soft law measures noted, “[a]necdotal evidence suggests that firms often work hard to enforce private standards.” MAURER, SELF-GOVERNANCE, *supra* note 6, at 69.

125. Shank, *supra* note 4, at 31. (“Many developers believe their role is complete when they publish their output, seeming to assume that some ‘invisible hand’ will guide the adoption process. But cases of spontaneous regulation by soft law seem highly unlikely.”)

126. Wallach & Marchant, *supra* note 1, at 506; JESSICA CUSSINS NEWMAN, DECISION POINTS POINTS IN AI GOVERNANCE: THREE CASE STUDIES EXPLORE EFFORTS TO OPERATIONALIZE AI PRINCIPLES 3–4 (2020), https://cltc.berkeley.edu/wp-content/uploads/2020/05/Decision_Points_AI_Governance.pdf; Sara E. Berger & Francesca Rossi, *Addressing Neuroethics Issues in Practice: Lessons Learnt by Tech Companies in Ai Ethics*, 110 NEURON 2082, 2054 (2022) (“While high-level principles help to clearly identify key values and define the position of an organization, what is also necessary is a plan for translating principles into practice.”).

associated with internal or external mechanisms for monitoring compliance,¹²⁷ and/or sanctions for failing to comply.¹²⁸

There is no silver bullet or single mechanism that can ensure the successful implementation and compliance with soft law. Given the variety of soft law instruments, and the wide range of contexts in which AI is applied, a set of implementation mechanisms may be optimal for any given situation, but the set of optimal mechanisms may vary depending on the context. Thus, what is needed is a Toolbox of soft law implementation or indirect enforcement mechanisms that an entity can select from to ensure that its soft law program has both substantive and process components, which we refer to as Soft Law 2.0. Drawing from the historical analysis of the drivers of successful soft law programs for other technologies in the past,¹²⁹ as well as the best practices and examples drawn from existing AI soft law programs,¹³⁰ we identify below thirteen possible mechanisms that collectively could form the Soft Law 2.0 Toolbox. No doubt other mechanisms can be added to this list. To optimize both effectiveness and credibility, each AI soft law program should integrate one or more of the following implementation or indirect enforcement mechanisms into its program.

A. CORPORATE ETHICS COMMITTEE

An organization may establish an ethics committee to oversee compliance with soft law measures concerning AI. Many companies involved in AI have established ethics committees, which are generally assigned the responsibility of evaluating the overall ethical concerns and issues associated with the

127. See *supra* note 16 and accompanying text. See also WORLD ECON. F., *supra* note 16, at 33 (“The monitoring of compliance – either by those in charge of the governance mechanism or a third party – is generally considered prerequisite to success for self- and co-regulation initiatives.”); ASEEM PRAKASH & MATTHEW POTOSKI, THE VOLUNTARY ENVIRONMENTALISTS: GREEN CLUBS, ISO 14001, AND VOLUNTARY ENVIRONMENTAL REGULATIONS 22 (2006) (voluntary programs with “credible monitoring and enforcement systems” are more credible and effective); FIORINO, *Voluntary Initiatives*, *supra* note 14, at 26.

128. See *supra* note 16 and accompanying text. See also WORLD ECON. F., *supra* note 16, at 33 (“The threat of sanctions for non-compliance can positively impact the effectiveness and credibility of self-and co-regulation initiatives.”).

129. See *supra* notes 52–53 and accompanying text.

130. See *supra* notes 2, 18 and accompanying text.

company's products and processes.¹³¹ These ethics committees are a promising venue for overseeing the implementation of soft law measures. They can advise on which soft law measures to adopt or create, help with implementation of the chosen soft law measure, review periodic reports on the company's conformance with the soft law measure, and consider any changes in the company's soft law commitments that may be appropriate.

A key consideration is whether the ethics committee should be internal or external.¹³² An internal committee is composed of company employees, representing different functions or units within the company, and usually consisting of relatively high-level individuals who have the influence and authority within the company to effect change and compliance. An example of such an internal ethics committee is Microsoft's AI, Ethics and Effects in Engineering and Research (AETHER) Committee, with representatives from seven specialized working groups.¹³³ The strengths of utilizing this type of internal ethics board include the proximity to company operations, leadership buy-in, and control of information.

The alternative structure is an ethics committee made up of external experts. The company would select a set of outside experts from academia, think tanks, NGOs, and government units who can provide a broad range of perspectives and ethical advice on the company's AI products and plans. The members of such an external committee are presumably more accountable to the public interest than the company convening the ethics committee. These external corporate ethics boards are beneficial for their independence, external accountability, and perceived legitimacy. However, these boards might suffer from company unfamiliarity, information security concerns, and instability. An example of a company with an external ethics committee is Axon, the manufacturer of Tasers and police body cameras.¹³⁴

131. Reid Blackman, *Why You Need an AI Ethics Committee*, HARV. BUS. REV., July–Aug. 2022, at 119, 123 (“At a high level the function of the committee is simple: to systematically and comprehensively identify and help mitigate the ethical risks of AI products that are developed in-house or purchased from their-party vendors.”).

132. See, e.g., NEWMAN, *supra* note 127, at 5 (listing internal and external oversight boards and committees).

133. *Id.*

134. On the positive side, the Axon Ethics Board's recommendation against commercializing facial recognition systems was adopted by the company, even though it resulted in reduced revenues. Carlos Ignacio Gutierrez, *Uncovering*

In addition to the choice between an external or internal ethics committee, there are several other important design issues for an ethics committee. One is representation on the committee and ensuring appropriate diversity with respect to professional discipline, demographic characteristics, and perspective.¹³⁵ Another issue is how public or private the deliberations and decisions of the ethics committee should be. Finally, what weight is given to the ethics board recommendations—are they purely advisory or do they have some decision-making authority?¹³⁶

Regardless of how they are structured, ethics committees have the potential to provide accountability and credibility for a company's behavior and can be a mechanism for identifying and mitigating misbehavior. Most relevant for present purposes, these ethics committees can recommend adoption and ensure compliance with soft law measures the company has signed up for. An ethics committee can also serve to provide a conduit for concerns and complaints to be expressed by employees in a confidential manner. For example, the police technology company Axon has a designated ombudsperson on their external ethics advisory committee to whom employees may raise concerns.¹³⁷

B. SUPPLY CHAIN

The supply chain for AI products and services provides an opportunity for private enforcement of soft law measures.¹³⁸ This

Incentives for Implementing AI Governance Programs: Evidence from the Field, IEEE TRANSACTIONS ON A.I. (forthcoming) (manuscript at 5), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3897486 (hereinafter Gutierrez, *Uncovering Incentives*). On the negative side, in 2022, nine members of the external ethics board resigned in protest of the company's suggestion about using laser-equipped drones to prevent school shootings. Press Release, Policing Project, Statement of Resigning Axon AI Ethics Board Members (June 6, 2022), <https://www.policingproject.org/statement-of-resigning-axon-ai-ethics-board-members>.

135. Blackman, *supra* note 132, at 125 (recommending AI ethics committee include ethicists, lawyers, business strategists, technologists, and representatives of the communities in which the AI system will be deployed).

136. *Id.* at 123–24.

137. *Axon AI Ethics Board*, AXON, <https://www.axon.com/axon-ai-and-policing-technology-ethics> [<https://web.archive.org/web/20220602223701/https://www.axon.com/company/ai-and-policing-technology-ethics>] (last visited Feb. 26, 2023).

138. WORLD ECONOMIC FORUM, *supra* note 17, at 33.

strategy chain has been used for many years in other sectors such as chemical, retail and medical product companies to enforce product stewardship requirements beyond one's own company.¹³⁹ For example, drugmaker AstraZeneca announced in 2008 that it would only do business with suppliers "who embrace standards of ethical behavior that are consistent with our own," which specifically included a requirement for utilizing private screening standards to ensure synthetic DNA samples were not used for inappropriate applications.¹⁴⁰

Both upstream suppliers and downstream purchasers have been required to comply with specifications provided by their supply chain partner in order to satisfy product stewardship and liability prevention measures that a company seeks to implement. This supply chain management evolved based on the recognition that a company could be held responsible and liable, especially if it has deep pockets, if it purchases and uses defective products from a supplier, or provides its own products to a downstream customer who may use them irresponsibly.

AI business partners could likewise implement such supply chain management by requiring compliance or certification with applicable AI soft law programs by both upstream suppliers and downstream customers as a condition of doing business with that company.¹⁴¹ As discussed previously, some AI companies already implement soft law compliance with their business partners. Kogniz, a manufacturer of facial recognition systems, requires its downstream customers to agree to and comply with its code of conduct, which is built into the sales contract.¹⁴² Other companies in the AI space, such as Telefonica Deutschland, CISCO and Huawei, require their suppliers to comply with their code of conduct.¹⁴³

Obviously, the more market power a company has, the more influence it has to insist on compliance with soft law measures

139. FIORINO, *supra* note 14, at 21-22; Daniel H. Fiorino & Manjyot Bhan, *Supply Chain Management as Private Sector Regulation: What Does it Mean for Business Strategy and Public Policy?* 25 BUS. STRATEGY & ENV'T 310 (2016).

140. Maurer, *supra* note 6, at 40-41.

141. See George Baryannis et al., *Supply Chain Risk Management and Artificial Intelligence: State of the Art and Future Research Directions*, 57 INT'L J. PROD. RSCH. 2179, 2179 (2019).

142. See *supra* notes 107-108 and accompanying text. See also Gutierrez, *Uncovering Incentives*, *supra* note 134, at 5.

143. *Id.*

on its upstream and downstream business partners. Although requiring supply chain partners to comply with soft law measures may result in some loss of business partners and revenues, these losses are likely to be more than made up for by the prevention of bad publicity and legal liability resulting from partnering with an irresponsible supplier or customer.¹⁴⁴

Soft law conformance along the supply chain can be verified with a “Supplier’s Declaration of Conformity (SDOC),” an instrument recognized by the National Institute of Standards and Technology (NIST) to certify conformance with a private standard in a supplier-customer relationship.¹⁴⁵ IBM researchers have proposed using the SDOC model for a supplier of an AI service to self-declare the AI’s system conformance to various soft law measures relating to factors such as intended use, performance, safety, bias, and security.¹⁴⁶ They refer to these self-declarations as “FactSheets,” and propose that private standards or other soft law instruments be used to standardize the content of these supplier declarations.¹⁴⁷ This proposal builds on a proposal from researchers at Google, Microsoft and elsewhere that “Datashets” be created to accompany any data set used for machine learning that “documents its motivation, composition, collection process, recommended uses, and so on.”¹⁴⁸

Information in the AI service supply chain FactSheet might include questions such as: “What is the intended use of the service output?” “What algorithms or techniques does this service implement?” “Which dataset was the service tested on?” “Are you aware of possible examples of bias, ethical issues, or other safety risks as a result of using the service?” “Are the service outputs explainable and/or interpretable?” “For each dataset used by the service: Was the dataset checked for bias? What efforts were made to ensure that it is fair and

144. Verónica H. Villena & Dennis A. Gioia, *A More Sustainable Supply Chain*, HARV. BUS. REV., Mar–Apr. 2020, at 92.

145. National Institute of Standards and Technology, *The Use of Supplier’s Declaration of Conformity* (undated), <https://www.nist.gov/system/files/documents/standardsgov/Sdoc.pdf>.

146. Matthew Arnold et al., *FactSheets: Increasing Trust in AI Services Through Supplier’s Declarations of Conformity*, 63 IBM J. RES. & DEV. 1, 3 (2019).

147. *Id.* at 6–7.

148. Timnit Gebru et al., *Datashets for Datasets*, arXiv:1803.09010v8 <https://arxiv.org/pdf/1803.09010.pdf>. (last revised Dec. 1, 2021).

representative? Does the service implement and perform any bias detection and remediation?”¹⁴⁹ With market pressures and standardized formats, the IBM researchers project that these checklists could become ubiquitous in AI service supply chains.¹⁵⁰

Value-chain management can be used by a company to specifically require upstream or downstream business partners to conform to soft law measures adopted by the company. An example is described in a case study of Salesforce’s Acceptable Use Policy which requires downstream customers to comply with ethical measures adopted by Salesforce.¹⁵¹ This Acceptable Use Policy expressly prohibits downstream customers from violating soft law measures endorsed by Salesforce including:

”any applicable industry standards, third party policies or requirements that Salesforce may communicate to its users, including all of the applicable guidelines published by the CTIA, the Mobile Marketing Association, the Self-Regulatory Principles as directed by the Digital Advertising Alliance and the Network Advertising Initiative or any other generally accepted industry associations, carrier guidelines or other industry standards.”¹⁵²

Salesforce is not unique in using its value-chain to leverage compliance with soft law measures by upstream and downstream business partners.¹⁵³

C. GOVERNMENT PROCUREMENT

Similar to supply chain management, government can influence adoption and implementation of soft law programs in the procurement process. For many technology products, governments are a major customer and thus can exert significant influence on product design and characteristics.¹⁵⁴ For example, the U.S. government’s Energy Star program, which

149. Arnold, *supra* note 146, at 6.

150. *Id.* at 7.

151. Brian Green et al., *Responsible Use of Technology: The Salesforce Case Study 16*, WORLD ECON. F. (2022), <https://www.weforum.org/whitepapers/responsible-use-of-technology-the-salesforce-case-study/>.

152. *Acceptable Use and External-Facing Services Policy*, SALESFORCE 3 (2022), https://a.sfdcstatic.com/content/dam/www/ocms-backup/assets/pdf/misc/ExternalFacing_Services_Policy.pdf.

153. See, e.g., Fiorino & Bhan, *supra* note 139, at 313–14.

154. See, e.g., Xiang Zhang et al., *Product Design: Impact of Government Policy and Consumer Preference on Company Profit and Corporate Social Responsibility*, 118 COMPUTS. AND CHEM. ENG’G 118, 120 (2018) (explaining how government policy can influence product creation and market creation).

recognized manufacturers that produced more energy efficient products, created inducements for companies to participate by, for example, giving preference to Energy Star products in government procurement.¹⁵⁵ Government procurement policies have been used over the years to favor and thus promote products that meet certain social objectives, such as sustainability, diversity, social equity, and good cybersecurity practices.¹⁵⁶ Given economies of scale, most companies that are required to meet certain specifications for government contracts will extend those same characteristics across their product lines, diffusing them into the private sector.¹⁵⁷

A number of governmental and private entities are already either implementing or advocating using the procurement process to promote more ethical AI.¹⁵⁸ The United Kingdom government, for example, has published guidelines for government procurement of AI systems that are intended to “set the foundation[] for the effective, responsible, and ethical deployment of AI technologies.”¹⁵⁹ In the U.S., President Trump adopted, and President Biden has continued, an Executive Order in December 2020 that called upon the government to ensure ethical and responsible use of AI, including “agencies’ procurement of AI.”¹⁶⁰

Procurement policy gives government a tool to influence AI much more flexibly than by adopting one-size-fits-all regulations that are frozen in time. Rather, procurement is based on individual contracts that can use soft law instruments that can readily adapt and evolve over time and by circumstance.¹⁶¹ The endorsement of AI soft law programs in these government

155. FIORINO, *supra* note 14, at 17.

156. Lavi M. Ben Dor & Cary Coglianese, *Procurement as AI Governance*, 2 IEEE TRANS. TECH. SOC’Y 192, 194 (2021).

157. *Id.* at 196.

158. Carlos Ignacio Gutierrez, *Procurement as an AI Governance Change Agent*, THE REGUL. REV. (July 6, 2022), <https://www.theregreview.org/2022/07/06/ignacio-gutierrez-procurement-as-an-ai-governance-change-agent/> (analyzing eighty-six such statements) (hereinafter “Gutierrez, *Procurement*”).

159. UK Office for Artificial Intelligence, *Guidelines for AI Procurement 28* (June 2020), available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/990469/Guidelines_for_AI_procurement.pdf.

160. Exec. Order No. 13960, 85 Fed. Reg. 78939 (Dec. 8, 2020).

161. Ben Dor & Coglianese, *supra* note 156, at 196.

procurement policies can then promote the spread of the AI soft law measures across the economy.¹⁶²

D. AUDITING/CERTIFICATION

Auditing and certification can demonstrate that a company or other entity is adhering to a particular set of soft law guidelines or principles.¹⁶³ Certification is usually provided after an audit to ensure conformance with a soft law measure or other criteria. The audit can be done in-house (self-audit), or by an independent third-party outside auditor. While third party audits by independent bodies are usually more credible, self-audits also have an appropriate role to play in responsible technology development.¹⁶⁴ In particular, internal audits are more likely in the early proprietary stages of technology development before problems develop with deployed systems, and this use of internal audits for quality assurance has proven effective in the finance, aviation, chemical, food, and pharmaceutical industries, and can likewise be applied to AI systems during development.¹⁶⁵

The credibility and independence of the third-party certifying body is essential for building trust in this auditing and certification process.¹⁶⁶ When structured properly, third-party audits and certification marks can create powerful economic incentives for firms to comply with applicable soft law measures.¹⁶⁷

162. *Id.* at 192; Gutierrez, *Procurement*, *supra* note 158.

163. Gary E. Marchant et al., *A New Soft Law Approach to Nanotechnology Oversight: A Voluntary Product Certification Scheme*, 28 UCLA J. ENVTL. L. & POL'Y 123, 125 (2010).

164. Inioluwa Deborah Raji et al., Univ. of Cal., Berkeley, Paper Presentation at 5th Annual ACM/AAAI AI Ethics and Society (AIES) Conference: Outsider Oversight: Designing a Third Party Audit Ecosystem for Governance (June 9, 2022), in ARXIV.ORG, June 2022 [DOI: arXiv:2206.04737 v1].

165. Inioluwa Deborah Raji, et al., Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency: Closing the AI Accountability Gap: Defining an End-to-End Framework for Internal Algorithmic Auditing, at 33, 42 (Jan. 2020) [//doi.org/10.1145/3351095.3372873].

166. Sasha Costanza-Chock et al., *Who Audits the Auditors? Recommendations from a Field Scan of the Algorithmic Auditing Ecosystem*, 2022 CONFERENCE ON FAIRNESS, ACCOUNTABILITY, AND TRANSPARENCY 1571–1583.

167. Howard Kunreuther et al., *Third-Party Inspection as an Alternative to Command and Control Regulation*, 22 RISK ANALYSIS 309, 309 (2002); Peter

Indeed, auditing and certification standards have been used successfully in a number of other industries such as the Energy Star program for energy efficient products.¹⁶⁸ The chemical industry's Responsible Care program mentioned above was revised after several years of operation and some criticism to require certification by independent third-party auditors, which increased the effectiveness and credibility of the program.¹⁶⁹

The IEEE, one of the world's leading professional associations addressing AI, is in the process of finalizing an auditing and certification program for ethical AI, called the Ethics Certification Program for Autonomous and Intelligent Systems (ECPAIS).¹⁷⁰ This auditing and certification program will have three separate "marks" that a company can earn for AI transparency, accountability, and algorithmic bias.¹⁷¹ The ECPAIS undertook a trial use case in 2020 with a certification program for Contact Tracing Applications and Contact Tracing Technologies (CTA/CTT) for COVID.¹⁷² The technologies are evaluated for transparency, accountability, and privacy to obtain the certification mark.¹⁷³

The IEEE is not the only entity working on an auditing and certification requirement for AI. In December 2020, the World Economic Forum, AI Global, and the Schwartz Reisman Institute at the University of Toronto announced a joint initiative to create an independent certification program for the responsible and trusted use of algorithmic decision-making and artificial intelligence systems.¹⁷⁴

Cihon et al., *AI Certification: Advancing Ethical Practice by Reducing Information Asymmetries*, 2 TRANS. TECH. & SOC'Y 200, 202 (2021).

168. FIORINO, *supra* note 14, at 17.

169. *Id.* at 20.

170. *The Ethics Certification Program for Autonomous and Intelligent Systems (ECPAIS)*, IEEE (2020), <https://standards.ieee.org/industry-connections/ecpais.html>.

171. *Id.*

172. SCOTT L. DAVID ET AL., INST. OF ELEC. AND ELEC. ENGINEERS STANDARDS ASS'N, CRITERIA FOR ADDRESSING ETHICAL CHALLENGES IN TRANSPARENCY, ACCOUNTABILITY, AND PRIVACY OF CONTACT TRACING (2020).

173. *Id.*

174. Jovana Jankovic, *Schwartz Reisman Institute and AI Global to Develop Global Certification for Trustworthy AI*, SCHWARTZ REISMAN INST. FOR TECH. & SOC'Y (Dec. 1, 2020), <https://srinstitute.utoronto.ca/news/ai-global-certification-partnership>.

E. COMMUNITY GROUPS/NON-GOVERNMENTAL ORGANIZATIONS

Partnerships with community and non-governmental organizations (NGOs) can promote reputational incentives for companies to faithfully implement soft law measures.¹⁷⁵ These partnership programs to implement soft law measures “combine the credibility and expertise of NGOs with the resources, knowledge and economic power of major business firms.”¹⁷⁶ Industry-only soft law programs are frequently subject to claims of “greenwashing” (or, more recently, “ethics washing”) – that the program is done for public relations rather than real societal benefit.¹⁷⁷ Involving NGOs in the design and oversight of the program can build public trust in the legitimacy of the soft law program.¹⁷⁸

In addition to improving public credibility, engaging in partnerships with NGOs can bring important areas of expertise and perspective into the project, which may be lacking from the industry participants.¹⁷⁹ Involving NGOs does present some risks and costs however. The more voices at the table, the more difficult and complex it may be to negotiate a soft law measure, and lead to a more contested politics.¹⁸⁰ In addition, by publicly inviting NGOs to participate, the industry partners risk that some or all the NGO partners will become disillusioned and walk out, which could be highly embarrassing and costly to the project’s reputation.¹⁸¹

For example, the environmental group Environmental Defense Fund has partnered with several corporations in soft law programs to develop more sustainable products and processes.¹⁸² Examples include partnerships with McDonald’s (environmental friendly packaging), Federal Express (more eco-friendly delivery vehicles), Wal-Mart (supply chain management), and DuPont (nanotechnology).¹⁸³ These soft law partnership programs between an NGO and major companies

175. WORLD ECON. F., *supra* note 176, at 33.

176. FIORINO, *supra* note 14, at 22.

177. Maurer, *Self-Governance*, *supra* note 6, at 25.

178. *Id.* at 25–26.

179. *Id.* at 73.

180. *Id.* at 73.

181. *Id.* at 73.

182. FIORINO, *supra* note 14, at 22.

183. *Id.*

produced significant societal benefits outside of the governmental regulatory system.

Other NGO-business soft law programs involve partnerships that include multiple companies and NGOs within each partnership. Examples include the Forest Stewardship Council and the Marine Stewardship Council, which produce principles, criteria, and standards that market participants must comply with to achieve approval of these multi-stakeholder collaborations.¹⁸⁴ This strategy of engaging NGOs has been adopted in the AI sphere by the Partnership on AI, a collaboration of most major AI companies that is engaged in producing soft law and ethical guidances, and has involved over 100 prominent NGOs within its organizational structure.¹⁸⁵

One step beyond NGO-business partnerships are multi-stakeholder processes. Multi-stakeholder processes involve the participation and cooperation of stakeholders from the outset in the design and implementation of a soft law program for a technology.¹⁸⁶ By including all interested parties (or their representatives) in a consensus process, the multi-stakeholder forum can enhance the objectivity, trust, and credibility of the resulting soft law mechanism.¹⁸⁷ A good example of multi-stakeholder mechanisms are the efforts of the National Telecommunication and Information Administration to create codes of conduct or best practices on several emerging technologies, including drones, facial recognition, and cybersecurity vulnerabilities.¹⁸⁸

F. TRADE ASSOCIATIONS

Trade associations can also be an important mechanism to incentivize conformance to soft law measures.¹⁸⁹ Trade associations have a number of potential incentives to adopt and enforce soft law programs for their members, including “to enhance the industry’s reputation, forestall regulatory action, disseminate best practices or improve the performance of weaker

184. Maurer, *Self-Governance*, *supra* note 6, at 26–29, 32–36.

185. *Our Partners*, PARTNERSHIP ON AI (2022), <https://partnershiponai.org/partners/>.

186. Hagemann et al., *supra* note 18, at 49–50.

187. *Id.* at 99–100.

188. Joseph Wright, *Feds Embrace Multistakeholder Approach to Tech Policy*, 15 PRIV. & SEC. L. REP. (BNA) 945 (2016).

189. WORLD ECON. F., *supra* note 16, at 33.

firms.”¹⁹⁰ Some examples of major soft law programs sponsored by trade associations include the Responsible Care Program by the Chemical Manufacturers’ Association (now the American Chemistry Council) and the Sustainable Forestry Initiative by the American Forest and Paper Association.¹⁹¹ Participation in these “voluntary” product stewardship programs is a condition of membership in the trade association.¹⁹²

One issue with trade associations as an enforcement mechanism is that they have an economic disincentive to expel companies that fail to comply with soft law programs, since company fees are the primary source of funds for trade associations. This issue blew up for the chemical industry’s Responsible Care program when legislators from ten states asserted in a letter to the CEO of the American Chemistry Council (ACC), the trade association that manages Responsible Care, that several ACC member companies had failed to comply with the Responsible Care requirements.¹⁹³ Specifically the legislators claimed that the activities of three manufacturers of flame retardant chemicals in denying risks and creating front groups to attack proposed legislation did not comply with the Responsible Care duty of “communicating forthrightly with governments and communities about chemical risks.”¹⁹⁴ The ACC CEO wrote back to say that the ACC did not condone the three companies’ activities, which were done outside the scope of the ACC, but did not expel the three companies.¹⁹⁵

Another limitation on the effectiveness of trade associations to enforce AI soft law specifically is that there is not a single trade association that encompasses the AI industry, like there is the chemical, forestry, or fisheries industry. Nonetheless, if more powerful trade associations form in the computer science and AI

190. FIORINO, *supra* note 14, at 16.

191. *Id.* at 16, 20-21.

192. *Id.* at 20.

193. Jeff Johnson, *Legislators Urge ACC To Expel Firms*, CHEM. & ENG. NEWS (July 11, 2012), <https://cen.acs.org/articles/90/i24/Legislators-Urge-ACC-Expel-Firms.html>.

194. Letter from James Hubbard, Md. House of Del., et al., to Calvin M. Dooley, President and Chief Executive Officer Am. Chem. Council (June 4, 2012), https://cen.acs.org/content/dam/cen/static/pdfs/Article_Assets/90/LegislatorLetterACC_Dooley.pdf.

195. Letter from James Hubbard, Md. House of Del., et al., to Sharon Treat, Hous. of Reps. of the State of Me., et al., from Cal Dooley, CEO of ACC (June 5, 2012).

industries in upcoming years, those trade associations could become important indirect enforcers of AI soft law. Moreover, as AI becomes ubiquitous across all business sectors, it is likely that existing trade associations will adopt their own AI guidelines for companies in their business sector. In the meantime, professional associations currently play a much larger role in the AI industry itself, and are discussed next.

G. PROFESSIONAL SOCIETIES

Professional societies can and do impose various forms of ethical codes or guidelines on their membership.¹⁹⁶ Noncompliance with these professional guidelines can result in various disciplinary actions, including expelling an individual from the society. This can often impede or prevent such a disbarred individual from practicing their profession, which gives these entities substantial influence in supervising the ethical and professional conduct of their members.¹⁹⁷ To the extent individual professionals are subject to soft law measures, such as professional society guidelines, this oversight can help ensure soft law compliance.

There are several professional societies for AI practitioners, including the Association for the Advancement of Artificial Intelligence (AAAI), the Institute of Electrical and Electronics Engineers (IEEE), and the Association for Computing Machinery (ACM). These entities all have their own code of ethics, but the effectiveness and credibility of these codes are limited. A study on the impact of the ACM Code of Ethics evaluated the decisions of software engineering professionals and students in response to eleven ethical vignettes, with half of each group given access to and consulted the ACM Code of Ethics, the control group had no access to the code. There was no difference in the ethical response to the dilemmas in the vignettes between those who had access to the ACM code and those who did not, in either the professional or student cohorts,

196. See, e.g., Don Gotterbarn et al., *ACM Code of Ethics: A Guide for Positive Action*, 61 COMM'NS ACM 121, 121 (2019) (explaining the existence of and changes made to the ACM code of ethics governing their group).

197. See, e.g., Jonathan Kimmelman et al., *Global Standards for Stem-Cell Research*, 533 NATURE 311, 313 (2016) (explaining how guidelines can force group members into compliance).

and so the researchers concluded the code had no impact on ethical decision-making.¹⁹⁸

Another study of management accountants compared the effect of professional society ethics codes with corporate codes of conduct adopted by the employers of accountants. The study found that the professional code of ethics had no impact whereas the employer code of conduct did result in less wrongdoing. The authors attributed the difference to the fact that the employer has direct oversight over the professional's work behavior and could affect the culture in which the professional worked.¹⁹⁹ Another study found that a professional code of conduct had no beneficial effect unless the professional's employer adopted and enforced that same code in its workplace.²⁰⁰

Marchant proposes three steps that could help make professional codes of ethics in the AI sector more effective and credible soft law measures.²⁰¹ These three steps are: (i) more comprehensive and transparent enforcement of professional codes of ethics; (ii) encouraging private AI companies to adopt and enforce professional society codes of ethics; and (iii) increase the professionalization of the field of AI practice.²⁰²

H. PATENT LICENSING

Patent licenses are one way that soft law regulations regarding AI could be supplemented in the short term future. A growing consideration when licensing emerging technologies is their potential widespread social and economic effects. In response, ethical licensing agreements have been utilized to enforce certain important ethical policies regarding the use of those technologies. The most well known set of ethical licensing agreements today are those in place for CRISPR, the powerful

198. A. McNamara, J. Smith & E. Murphy-Hill, *Does ACM's Code of Ethics Change Ethical Decision Making in Software Development?*, ESEC/FSE 2018: PROC. OF THE 2018 26TH ACM JOINT MEETING ON EUR. SOFTWARE ENG. CONF. AND SYMP. ON THE FOUND. OF SOFTWARE ENG., 729–733 (Oct. 2018).

199. M.J. Somers, *Ethical Codes of Conduct and Organizational Context: A Study of the Relationship Between Codes of Conduct, Employee Behavior and Organizational Values*, 30 J. BUS. ETHICS 185 (Mar. 2001).

200. Alberic Pater & Anita Van Gils, *Stimulating Ethical Decision-Making in a Business Context: Effects of Ethical and Professional Codes*, 21 EUR. MANAGE. J. (No. 6) 762 (2003).

201. Gary E. Marchant, *Professional Societies as Adopters and Enforcers of AI Soft Law*, 2(4) IEEE TRANS. TECH. & SOCIETY 183–191 (2021).

202. *Id.*

gene editing tool developed by the Broad Institute and other researchers. CRISPR licensees with the Broad are prohibited from using the technology to modify human embryos, alter ecosystems, or modify tobacco plants.²⁰³ While ethical licensing currently is mainly practiced in the biotechnology sector, there is no readily apparent reason why it could not also be applied to controversial uses of AI technology moving forward.

There are certainly both advantages and disadvantages of relying on ethical licensing to enforce soft law with regards to any emerging technology. Licensing agreements can be created far more quickly than government regulations can be put into place, those who hold the patents are likely in a position to best understand the technology and its potential uses, licensing agreements can be flexibly edited as new use cases arise by including clauses permitting the patentee to modify the terms if new risks appear,²⁰⁴ and licensing agreements are enforceable in court unlike most other professional standards.²⁰⁵ On the other hand, these agreements are voluntary, have potential motivational problems for patent holders, lack democratic input on their restrictions,²⁰⁶ and rely on private enforcement to bear the costs of policing social harms.²⁰⁷

Patent licensing agreements can be created far more quickly than government regulations can be put into place. Moreover, licensing agreements are typically created through a negotiation between two parties with a narrow focus on their field and purpose. Each party likely has a clear picture of what they hope to achieve with the negotiation and what they are willing to concede to move the deal forward. Where effective government regulations concerning emerging technologies may take years to be implemented, patent licensing agreements could address potential issues quickly in the interim period.²⁰⁸

203. Christi Guerrini et al., *Rise of the Ethical License*, 35 NATURE BIOTECH. 22, 23 (2017).

204. Oliver Feeney et al., *Ethics, Patents, and Genome Editing: A Critical Assessment of Three Options of Technology Governance*, 3 FRONTIERS IN POLITICAL SCIENCE 731505 (2021).

205. Guerrini, *supra* note 203.

206. Feeney, *supra* note 204.

207. Jacob Sherkow et al., *Governing Human Germline Editing Through Patent Law*, 326 JAMA 1149, 1150 (2021).

208. Aisling McMahon, *Accounting for Ethical Considerations in the Licensing of Patented Biotechnologies and Health-Related Technologies: A*

Patent holders are likely in the best position to understand the potential implications or consequences of the technology. Policy makers generally do not possess the scientific knowledge on a given topic that patent holders do, which could serve to make it more difficult for them to make informed decisions regarding the necessary regulations for emerging technologies.²⁰⁹ There is some hope that patent holders will be better able to balance competing interests such as safety versus economic benefits that policy makers may be subjected to,²¹⁰ although that hope is speculative at this time.

Licensing agreements will have greater flexibility than government regulations, and can be quickly adapted to address new developments in AI technology. It is likely that as AI is further developed new contentious use cases will arise, and by utilizing the patent licensing agreements to provide a stopgap when these uses are identified it will allow time for relevant regulatory bodies to address the issues.²¹¹

Also, contrary to many forms of soft law such as professional guidelines, patent licensing agreements are enforceable in court. Entities who choose to break the conditions in the licensing agreement or who choose to forego obtaining a license would face the threat of a patent infringement lawsuit.²¹² Court enforceability is one of the most attractive aspects of patent licensing agreements as a soft law enforcement technique, as it provides a much greater incentive to operate within the ethical standards to potential bad actors than other soft law techniques.

While there are many significant upsides when looking to patent licensing agreements to enforce soft law, the downsides are similarly significant. Many patent holders would face motivational problems in regards to instituting ethical licensing agreements. While the Broad Institute's licensing agreements around CRISPR present an example of an extremely valuable patent being significantly curtailed for ethical reasons, the

Justification, PATENTING BIOTECHNICAL INNOVATION 164 (Naomi Hawkins ed., 2022) [hereinafter McMahon, *Accounting*].

209. Feeney, *supra* note 204.

210. *Id.*

211. McMahon, *supra* note 208.

212. Jacob Sherkow, *Controlling CRISPR Through Law: Legal Regimes as Precautionary Principles*, 2 THE CRISPR J. 299, 301–02 (2019).

Broad Institute itself is unlike many patent holders,²¹³ especially in the AI space. When it comes to AI, the largest patent holders are private, profit seeking companies such as Microsoft, IBM, Google, and others.²¹⁴ Limiting a licensee's uses through ethical licensing will necessarily reduce the economic value of the license. Private companies may be less motivated to institute ethical licensing when it comes down to a choice between ethics and profits.

Patent licensing agreements also lack democratic input on their terms. Licenses do not allow public input on what uses will and will not be restricted in any appreciable sense, challenging notions of transparency and legitimacy in technology development.²¹⁵ By leaving the determination of socially responsible uses of foundational technologies to the sole discretion of the patentee, questions of procedural justice are raised.²¹⁶ It is plausible that a patent holder could adopt conditions due to their own moral opposition, but on which there is no consensus, limiting technological development when that may not have been the preferred course of the community.²¹⁷ Turning to ethical licensing as a major method of regulation in AI could raise concerns regarding the level of power that the approach can concentrate in the hands of people or corporations who are not accountable to anyone but shareholders.²¹⁸

I. LIABILITY INSURERS

Insurance can provide an additional indirect enforcement tool for AI soft law programs.²¹⁹ Liability insurers could require

213. Aisling McMahon, *Biotechnology, Health and Patents as Private Governance Tools: the Good, the Bad and the Potential for Ugly?*, 3 INTELLECTUAL PROPERTY QUARTERLY 161, 161–79 (2020).

214. Nathan Calvin & Jade Leung, *Who Owns Artificial Intelligence? A Preliminary Analysis of Corporate Intellectual Property Strategies and Why They Matter*, CTR. FOR THE GOVERNANCE OF AI, Feb. 2020, at 2–3.

215. Naomi Scheinerman & Jacob Sherkow, *Governance Choices of Genome Editing Patents*, 3 FRONTIERS IN POLITICAL SCIENCE 745898, Sept. 6, 2021.

216. Nienke de Graeff et al., *Fair Governance of Biotechnology: Patents, Private Governance, and Procedural Justice*, 18 AM. J. OF BIOETHICS 57, 57–59 (2018).

217. McMahon, *Accounting*, *supra* note 208.

218. Feeney, *supra* note 204.

219. Lucille Nalbach Tournas & Diana M. Bowman, *AI Insurance: Risk Management 2.0*, 40(4) IEEE TECH. SOC'Y. MAG. 52 (2021); Anat Lior, *Insuring AI: The Role of Insurance in Artificial Intelligence Regulation*, 35 HARV. J.L. TECH. 467 (2022).

the implementation of appropriate AI risk management programs as a condition of coverage.²²⁰ Such “quasi-regulation”²²¹ risk management strategies were employed with nanotechnology, which like AI presents insurers with the prospect of longtail liabilities without any experience to estimate or price risk.²²² For example, some insurers for nanotechnology companies required implementation of the Dupont-EDF NanoRisk Framework as a condition for liability coverage.²²³ Similarly, cyber-insurance providers are now requiring compliance with a series of best practices—including use of two-factor authentication, utilization of endpoint detection and response tools, email filtering solutions, and backup practices – a condition for coverage or favorable pricing of cyber-insurance policies.²²⁴

Soft law programs can likewise provide a useful framework for insurers to adopt in managing the risks of the AI systems of their clients. Insurance “has the power to better handle AI-inflicted damages, both as a preventive function before harms occur and as a compensatory function after harms occur.”²²⁵ To be sure, insurers face important limitations in this quasi-regulatory role, including the lack of information and expertise needed to effectively manage technology risk.²²⁶ Yet, as was the case with the Dupont-EDF soft law program for nanotechnology, AI soft law programs can provide insurance companies a convenient and well-vetted set of criteria to which they can require their clients to conform.²²⁷

220. Omri Ben-Shahar & Kyle D. Logue, *Outsourcing Regulation: How Insurance Reduces Moral Hazard*, 111 MICH. L. REV. 197, 209 (2012).

221. Tournas & Bowman, *supra* note 219, at 54.

222. Gary E. Marchant, ‘Soft Law’ Mechanisms for Nanotechnology: Liability and Insurance Drivers, 17 . RISK RSCH. 709, 716–17 (2014); FIORINO, *supra* note 14, at 28.

223. FIORINO, *supra* note 14, at 32.

224. Sharon D. Nelson, Cyberinsurance Applications Now Demand Specific Security Measures, RIDE THE LIGHTNING: CYBERSECURITY AND FUTURE OF L. PRAC. BLOG (May 12, 2022), <https://senseient.com/ride-the-lightning/cyberinsurance-applications-now-demand-specific-security-measures/>.

225. Lior, *supra* note 219, at 1.

226. Kenneth S. Abraham & Daniel Schwarcz, The Limits of Regulation by Insurance, 98 INDIANA L. J. (forthcoming 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4119812.

227. Tournas & Bowman, *supra* note 219, at 54.

J. PROFESSIONAL JOURNALS

Professional journals could require compliance with certain best practices or guidelines provided by soft law instruments as a condition of publication. The issue of the responsibility of scientific journals in publishing research outcomes that could be problematic from an ethical or national security perspective came to the forefront after 9/11 in the context of whether some dual-use biological research should be openly published in scientific journals.²²⁸ This led to a joint statement by the editors of several prominent journals on how they intended to balance scientific openness versus national security in deciding what they would or would not publish.²²⁹

The controversial and problematic attempt to self-censor publications by journals was plagued by the lack of any clear and credible consensus or guidelines for making such decisions.²³⁰ Rather, the journals had to come up with their own criteria in consultation with the scientific community. However, when a credible soft law measure already exists, it is an easier and less controversial strategy for journals to refuse to publish articles that do not comply with the pre-existing soft law measure. Some journals have already begun to undertake such measures with respect to other emerging technologies. For example, the *Nature* journals have stated that they will not publish any articles involving stem cells or human genome editing that fail to comply with the International Society for Stem Cell Research Guidelines for Stem Cells.²³¹ One could imagine that journals in the AI field may require as a condition for publication that authors certify compliance with specified AI soft law instruments.

Using journals as an indirect enforcement tool for soft law programs has clear potential and benefits, although also some limitations. There are a large number of journals, and it is

228. Maurer, Self-Governance, *supra* note 6, at 117–18.

229. Journal Authors and Editors Group, *Statement on Scientific Publication and Security*, 299 *SCIENCE* 1149 (2003).

230. One prominent bioethicist involved in the process stated that the journal editors' extended flirtation with self-censorship resulted in an "unacceptable" outcome. Michael J. Selgelid, *A Tale of Two Studies: Ethics, Bioterrorism, and the Censorship of Science*, 37(3) *HASTINGS CTR REP.* 35, 42 (May–June 2007).

231. Editorial, *Human Embryo and Stem-Cell Research*, 557 *NATURE* 6, 6 (2018).

unlikely that all journals in a specific field like AI would agree to enforce a soft law measure.²³² However, provided that higher-ranked journals agree to enforce the measure, lower-ranked journals, authors, and academic libraries will all be criticized for failing to follow the lead of those journals, which will likely incentivize alignment.²³³ Another challenge is determining which soft law measure journals should enforce, which could be a major challenge in a field such as AI where hundreds of AI soft law measures exist.

K. GOVERNMENT PRESSURE AND BACKSTOPS

Governments have a variety of mechanisms to induce companies to comply with soft law programs. For example, a government agency could threaten regulation if it determines there is inadequate compliance with a soft law measure.²³⁴ Such pressures are sometimes referred to as the “shadow of hierarchy” model of incentivizing private actions.²³⁵ In other cases, “the state may need to mandate the development of industry-led governance through some form of co-regulation.”²³⁶ Yet another tool available to government is to offer a carrot or reward to companies that adhere to soft law programs, such as expedited permitting, relaxed enforcement measures, increased access to government information and other resources, and public recognition for being a good corporate citizen.²³⁷

“[E]xperience with voluntary initiatives suggests that they may be more effective when these conditions – a regulatory default and/or having specific obligations – are present.²³⁸ For example, the success of EPA’s 33/50 program, an early 1990s voluntary program that encouraged facilitates to reduce toxic emissions beyond statutory limits, was largely attributed to EPA’s implicit threat to adopt onerous new regulations if the voluntary program to reduce the emissions failed.²³⁹

232. Maurer, *Self-Governance*, *supra* note 6, at 136.

233. *Id.*

234. WORLD ECON. F., *supra* note 16, at 33; FIORINO, *supra* note 14, at 25.

235. Maurer, *Self-Governance*, *supra* note 6, at 12.

236. WORLD ECON. F., *supra* note 16, at 33.

237. FIORINO, *supra* note 14, at 16, 18.

238. *Id.* at 15.

239. *Id.* at 17.

L. FTC ENFORCEMENT

The Federal Trade Commission (FTC), under its Section 5 general authority to take enforcement actions against deceptive and unfair business practices,²⁴⁰ could take action against a company that publicly commits to comply with a certain code of conduct or best practices, but then fails to live up to its commitment.²⁴¹ The FTC has already used its power against companies that fail to comply with their voluntarily adopted privacy policies.²⁴² Similarly, the FTC has used a company's failure to adhere to NIST cybersecurity guidelines, a form of soft law, in bringing enforcement actions under Section 5.²⁴³

While the FTC lacks the resources to monitor and enforce all AI soft law commitments,²⁴⁴ one or two high-profile enforcement actions against significant companies that flagrantly ignored their own soft law commitments and caused significant human harm or injury could send a strong shot across the bow for all soft law adopters. There have already been some initial FTC enforcement action against companies that violate soft law commitments. For example, FTC took enforcement action against a company that falsely claimed it adhered to the guidelines of a FTC-approved COPPA safe harbor program, such as the Better Business Bureau's Children's Advertising Review Unit (CARU) program.²⁴⁵

240. 15 U.S.C. § 45.

241. Wallach & Marchant, *supra* note 1, at 506; Hagemann et al., *supra* note 18, at 105.

242. FED. TRADE COMM'N, FTC'S USE OF ITS AUTHORITIES TO PROTECT CONSUMER PRIVACY AND SECURITY 2 (2020), <https://www.ftc.gov/system/files/documents/reports/reports-response-senate-appropriations-committee-report-116-111-ftcs-use-its-authorities-resources/p065404reportprivacydatasecurity.pdf>.

243. See Emile Loza de Siles, *Soft Law for Unbiased and Nondiscriminatory Artificial Intelligence*, IEEE TECH. & SOC'Y MAG., Dec. 2021, at 77, 79.

244. See, e.g., Harper Neidig, *FTC Says It Only Has 40 Employees Overseeing Privacy and Data Security*, THE HILL (Apr. 3, 2019), <https://thehill.com/policy/technology/437133-ftc-says-it-only-has-40-employees-overseeing-privacy-and-data-security/>.

245. Press Release, FTC, Swiss Digital Game Developer Settles FTC Allegations that it Falsely Claimed it was a Member of COPPA Safe Harbor Program (May 19, 2020), <https://www.ftc.gov/news-events/news/press-releases/2020/05/swiss-digital-game-developer-settles-ftc-allegations-it-falsely-claimed-it-was-member-coppa-safe>.

M. LIABILITY

Compliance or lack of compliance with applicable soft law provisions, such as codes of conduct or best practices, may also be relevant evidence in liability lawsuits to determine whether a company exercised reasonable care.²⁴⁶ In evaluating whether an AI entity is liable for harm caused by its products or activities a judge or jury may consider the reasonableness of the entity's actions, which can often be affected by the compliance (or lack thereof) with soft law programs.²⁴⁷

For example, a tort defendant may voluntarily comply with programs or standards not only to reduce its risk of litigation, but to use as evidence of due care if litigation arises.²⁴⁸ Even if the defendant is held liable, such steps would protect it from punitive damages.²⁴⁹ Conversely, if a defendant failed to comply with an existing soft law standard that applied to a technology, the plaintiff could likely argue that the defendant failed to exercise due care.

IV. CONCLUSION

Whether by choice or by default, soft law measures will be the primary approach for governing AI for the foreseeable future. Yet, soft law governance suffers from limited effectiveness and poor credibility. To increase both the effectiveness and trust in AI soft law, soft law must evolve beyond the current principles-based focus and include processes for implementing and assuring compliance. This article describes ten indirect enforcement mechanisms that hold promise for AI soft law, and there are undoubtedly many others. Advancing these mechanisms will be critical for ensuring the smooth and successful development of AI and its many exciting benefits.

246. Marchant, *supra* note 222, at 714–715.

247. GARY MARCHANT, SWORDS AND SHIELDS: IMPACT OF PRIVATE STANDARDS IN TECHNOLOGY-BASED LIABILITY 12 (2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4178750.

248. Edward R. Glady et al., *Nanotechnology Liability: Do We Steer or Just Go Along for the Ride?*, 52 JURIMETRICS J. 313, 331 (2012).

249. David G. Owen, *Problems in Assessing Punitive Damages Against Manufacturers of Defective Products*, 49 U. CHI. L. REV. 1, 40 (1982) (“In a typical case, compliance with a universal industry custom should be held conclusively to establish good faith against a punitive damage claim.”).