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Linking the Public Benefit to the Corporation: Blockchain as a Solution for Certification in an Age of "Do-Good" Business

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ABSTRACT

As part of its now-infamous emissions scandal, Volkswagen spent tens of millions of dollars on advertising geared toward environmentally conscious consumers. The scandal is an example of "greenwashing," which, along with the corresponding term "fairwashing," represents the information asymmetry present in product markets that involve claims of social and environmental responsibility in companies' production practices. As consumers and investors demand responsible production practices from both traditional corporations and entities organized under the newer corporate form known as public benefit corporations (PBCs), it becomes even more important to verify that those entities' supply chains are, in fact, meeting standards for the social or environmental responsibility that they purport or strive to have. Blockchain technology is a promising tool for providing the level of accountability that has become necessary in the modern business world. As an electronic, decentralized ledger, it could provide an effective disclosure method for the purpose of certifying that businesses' supply chains comply with standards for social and environmental responsibility. This Note argues that blockchain's inherent transparency fosters the accuracy in certification needed to create prosocial, procompetitive effects in the growing market for companies with sustainable business practices. These effects should outweigh potential antitrust concerns that could give rise to legal challenges against a uniformly adopted system of blockchain-based certification methods.

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In 2016, the Federal Trade Commission (FTC) secured $10 billion in the "largest false advertising case in FTC history" through a settlement with Volkswagen (VW).[1] In one of the most infamous modern instances of fraud, VW implanted a device in its vehicles to trick emissions tests, thereby selling cars that not only polluted up to forty times the amount of nitrogen oxide permissible under US regulations[2] but also violated regulatory schemes of governments around the world.[3] According to the FTC's complaint in the US

1. *Volkswagen 2.0L Settlement*, FED. TRADE COMM'N (Oct. 2016), https://www.ftc.gov/enforcement/cases-proceedings/refunds/volkswagen-settlement [https://perma.cc/8NVM-KGJ3].

2. Russell Hotten, *Volkswagen: The Scandal Explained*, BBC NEWS (Dec. 10, 2015), http://www.bbc.com/news/business-34324772 [https://perma.cc/7LVL-U6PT].

3. Jess McHugh, *Volkswagen Diesel Scandal Update 2015: Affected Countries Are Largely in North America, Europe, but Asia Not Immune [MAP]*, INT'L BUS. TIMES (Oct. 12, 2015, 12:30 PM), http://www.ibtimes.com/volkswagen-diesel-scandal-update-2015-affected-countries-are-largely-north-america-2137284 [https://perma.cc/3RSW-L5KE]; Reuters, *EU Finds That VW*

District Court for the Northern District of California, VW "spent tens of millions of dollars" on advertising that "targeted . . . 'progressive' and 'environmentally-conscious' consumers" by "stud[ying] their . . . psychology[and] concluding that such consumers 'rationalize themselves out of their aspirations and justify buying lesser cars under the guise of being responsible.'"[4] The complaint described numerous advertising efforts focusing on the theme of consumer environmental conscientiousness,[5] such as a 2008 television advertisement entitled "Do Your Part"[6]:

> [The ad] depicts people commuting in different environmentally friendly ways: "trying to do their part" by taking the bus, riding a Segway, biking, and driving a car with the bumper sticker "powered by vegetable oil." Then an Audi A3 speeds by, and the announcer observes: "Some just have more fun doing it." The screen reads: "42mpg. 30% fewer emissions." The ad ends with the tagline: "Diesel. It's no longer a dirty word."[7]

By installing the emissions test–defying device in its cars, VW not only purposely deceived governmental inspectors into believing that the vehicles complied with relevant regulations and laws but also violated the representations made to consumers through an aggressive and concerted advertising effort.[8] Moreover, in addition to violating consumer confidence and government requirements, the scandal betrayed VW shareholders' expectations that the company managers would act in good faith to maximize share value.[9] The shareholders have filed claims for damages totaling around $9.2 billion.[10] VW's

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Broke Consumer Laws in 20 Countries, Report Says, FORTUNE (Sept. 5, 2016), http://fortune.com/2016/09/05/eu-volkswagen-emissions-tests/ [https://perma.cc/6NEJ-85HE].

4. Complaint for Permanent Injunction and Other Equitable Relief ¶¶ 22–23, FTC v. Volkswagen Grp. of Am., Inc., No. 3:16-cv-01534 (N.D. Cal. Mar. 29, 2016) (quoting "Volkswagen USA's Marketers"), https://www.ftc.gov/system/files/documents/cases/160329volkswagen_cmpt.pdf [https://perma.cc/6PYA-CQEF].

5. *See id.* ¶ 26.B–J.

6. *Id.* ¶ 26.A.

7. *Id.*

8. E.J. Schultz, *FTC Charges Volkswagen with Deceptive Advertising*, ADAGE (Mar. 29, 2016), http://adage.com/article/cmo-strategy/ftc-charges-volkswagen-deceptive-advertising/303306/ [https://perma.cc/5U2K-ZFJN]; *see, e.g.*, Guilbert Gates et al., *How Volkswagen's 'Defeat Devices' Worked*, N.Y. TIMES (Mar. 16, 2017), https://www.nytimes.com/interactive/2015/business/international/vw-diesel-emissions-scandal-explained.html.

9. Peter Campbell, *Volkswagen's Market Share Falls After Scandal: Sales Performance in the First Half of 2016 Lags Behind Rivals*, FIN. TIMES (July 15, 2016), https://www.ft.com/content/35575f80-4a75-11e6-b387-64ab0a67014c [https://perma.cc/3MY6-T52D]; Paul R. La Monica, *Volkswagen Has Plunged 50%. Will It Ever Recover?*, CNN MONEY (Sept. 25, 2015, 1:06 PM), http://money.cnn.com/2015/09/24/investing/volkswagen-vw-emissions-scandal-stock/ [https://perma.cc/9GZD-TE3Z].

10. Nicola Clark, *Volkswagen Shareholders Seek $9.2 Billion over Diesel Scandal*, N.Y. TIMES (Sept. 21, 2016), https://www.nytimes.com/2016/09/22/business/international/volkswagen-vw-investors-lawsuit-germany.html?_r=0 [https://perma.cc/97RD-XH2R]; *see also* Reuters,

effort to represent its product as a car for the environmentally conscious is perhaps the most notorious modern example of "greenwashing"—the act of plastering a product with an undeserved eco-friendly label.[11]

With the prominent role and high impact of corporations on society and the environment, modern consumers demand more accountability for corporate practices and business choices than traditional corporate doctrine strictly requires.[12] Scholars and observers of corporate law and business ethics have noted this shift and debate the extent to which traditional corporate law allows businesses to pursue some expanded corporate purpose beyond traditional profit maximization.[13] Meanwhile, traditional corporations are voluntarily imposing environmentally and socially responsible standards on themselves and their supply chains.[14] Businesses with

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Volkswagen Faces Shareholder Claims over Emissions Scandal, CNBC (Jan. 18, 2016, 11:19 PM), http://www.cnbc.com/2016/01/18/volkswagen-faces-shareholder-claims-over-emissions-scandal.html [https://perma.cc/D4GS-SZ7B] ("Dozens of large shareholders in Volkswagen plan to sue the carmaker in a German court, seeking compensation for the plunge in its shares due to its emissions test cheating scandal.").

11. *See* Tracey M. Roberts, *The Rise of Rule Four Institutions: Voluntary Standards, Certification and Labeling Systems*, 40 ECOLOGY L.Q. 107, 147 (2013).

12. *See* discussion *infra* Part I.A.

13. JOSEPH HEATH, MORALITY, COMPETITION, AND THE FIRM: THE MARKET FAILURES APPROACH TO BUSINESS ETHICS 25–26 (2014) ("Profit-maximization and self-interest are not the same thing, and the failure to distinguish adequately between the two can be a source of enormous confusion. . . . [B]usiness ethics is best understood as a set of additional constraints that preclude legally permissible, but not normatively justifiable, profit-maximizing strategies."); LYNN STOUT, THE SHAREHOLDER VALUE MYTH: HOW PUTTING SHAREHOLDERS FIRST HARMS INVESTORS, CORPORATIONS, AND THE PUBLIC 2–4 (2012); Margaret M. Blair & Lynn A. Stout, *A Team Production Theory of Corporate Law*, 85 VA. L. REV. 247, 253 (1999) ("The team production model provides an alternative answer to the question of why corporate law grants directors of public corporations so much leeway. . . . Because this view challenges the shareholder primacy norm that has come to dominate the theoretical literature, our analysis appears to parallel many of the arguments raised in recent years by the 'communitarian' or 'progressive' school of corporate scholars who believe that corporate law ought to require directors to serve not only the shareholders' interests, but also those of employees, consumers, creditors, and other corporate 'stakeholders.'"); Gabriel Rauterberg, *The Corporation's Place in Society*, 114 MICH. L. REV. 913, 914 (2016).

14. *See, e.g.*, Michael P. Vandenbergh, *Private Environmental Governance*, 99 CORNELL L. REV. 129, 157 (2013) ("Wal-Mart, meanwhile, imposes energy efficiency requirements on its suppliers. . . . [I]t demands less energy use, which typically correlates with lower emissions of greenhouse gases and other air pollutants. The motivations are complex, but the important aspect of the supply chain contracting in this case is that it serves an environmental protection function (e.g., reducing air pollution) that Wal-Mart has no public law obligation to address in its supply chain contracts."); *see also* Steve New, *The Transparent Supply Chain*, HARV. BUS. REV. (Oct. 2010), https://hbr.org/2010/10/the-transparent-supply-chain [https://perma.cc/UAW6-H7C7] (providing Wal-Mart, Tesco, and Kroger as examples of firms that have started to increase transparency about their supply chains); Andrew Ross Sorkin, *Apple's Tim Cook Barnstorms for 'Moral Responsibility'*, N.Y. TIMES: DEALBOOK (Aug. 28, 2017),

socially and environmentally responsible practices draw increasing consumer demand and investment value,[15] and similar prominence is growing for the public benefit corporation (PBC)[16]—a "new type of business structure that empowers the corporation's leadership to balance public benefits against shareholder profits."[17] In contrast to the traditional corporate model, in which maximizing value for shareholders is the primary goal of the company,[18] "directors in a [PBC] are required to balance shareholders' interests, the public's interest and the interests of other stakeholders (such as employees)."[19] Therefore, the very purpose of the PBC corporate form is to require that the companies implement practices advancing a public benefit,

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https://www.nytimes.com/2017/08/28/business/dealbook/tim-cook-apple-moral-responsibility.html [https://perma.cc/Z3F2-AJSN] ("'The reality is that government, for a long period of time, has for whatever set of reasons become less functional and isn't working at the speed that it once was. And so it does fall, I think, not just on business but on all other areas of society to step up.' That was Tim Cook, Apple's chief excutive . . . ."). *But see* Karen Bradshaw Schulz, *New Governance and Industry Culture*, 88 NOTRE DAME L. REV. 2515, 2517–18, 2519 (2013) ("Sustainability certifications [in the forestry industry] emerged not as private self-regulation by an industry, but instead as a public-private partnership, in which state agency employees and industry actors worked together to enforce standards. . . . Private forms of social regulation working in tandem with government institutions are rapidly supplanting older, state-centric models of market regulation. New governance focuses upon non-state actors governing their own behavior based on self-generated norms and rules, with decreased reliance [sic] state enforcement powers.").

15. *See* discussion *infra* Part I.A.

16. *See* discussion *infra* Part I.A.

17. CT Corp. Staff, *Benefit Corporations: FAQs*, WOLTERS KLUWER (Jan. 7, 2016), https://ct.wolterskluwer.com/resource-center/articles/benefit-corporations-faqs [https://perma.cc/39A5-245A].

18. *See* Dodge v. Ford Motor Co., 170 N.W. 668, 684 (Mich. 1919); *see also* David J. Berger, In Search of Lost Time: What If Delaware Had Not Adopted Shareholder Primacy? 3 (Feb. 15, 2017) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2916960 [https://perma.cc/C2KD-LBLW] ("Since at least the mid-1980s we have lived in a world of shareholder primacy. In this world the primary duty of directors is to maximize the value of the corporation for the benefit of the stockholders. Directors who reject this notion, who take actions that are for the primary benefit of other so-called 'stakeholders' in the corporation—be they employees, customers, the communities served by the corporation or others—have their ideas rejected in the boardroom, may be the subject of scorn and derision in the business press and with their peers, can be voted out of their positions by shareholders and even be found to have breached their fiduciary duty to the company and its shareholders." (footnote omitted)); Michael B. Dorff, *Why Public Benefit Corporations?*, CLS BLUE SKY BLOG (Nov. 28, 2016), http://clsbluesky.law.columbia.edu/2016/11/28/why-public-benefit-corporations/ [https://perma.cc/7A5C-GV9Q] ("Delaware corporate law holds as a core precept that the corporation's goal is to maximize shareholder value."). *But see* STOUT, *supra* note 13, at 3; Blair & Stout, *supra* note 13, at 254 (proposing a "mediating hierarchy" approach to corporate law).

19. CT Corp. Staff, *supra* note 17; *see also FAQ: General Questions*, BENEFIT CORP., http://benefitcorp.net/faq [https://perma.cc/LPG9-LG6D] (last visited Dec. 21, 2017); *Legal FAQS*, BENEFIT CORP., http://benefitcorp.net/sites/default/files/documents/Implications_of_Becoming_a_DE_Public_Benefit_Corporation_0.pdf [https://perma.cc/M5XN-W5FY] (last visited Dec. 21, 2017).

making it crucial that those practices be effectively verified as such. The more market power companies stand to gain from reputations for socially or environmentally responsible production practices, the more important it becomes to verify the accuracy of those reputations—as VW customers and shareholders would likely confirm.

Meanwhile, innovators have repurposed blockchain technology from its famous use underlying the Bitcoin cryptocurrency to track production along corporate supply chains to ensure that the conscientious business practices being reported and advertised are truly taking place.[20] As an independently verifiable and decentralized ledger, blockchain technology could play an important role in the changing corporate environment by providing enhanced transparency in the certification systems used to verify compliance with standards.

This Note argues that as the market value of responsible production—both by traditional corporations and PBCs—grows, it becomes more necessary to verify purported socially and environmentally responsible practices. Blockchain represents a promising tool to provide such accountability in enforcing standards for certification and labeling systems. Part I describes the economic market in which socially responsible products and PBCs rose to prominence; the nature of the PBC corporate form; the role of standards, certifications, and labeling systems in addressing market failures and gaps in the legal regime; and background information about blockchain technology. Next, Part II analyzes the practical and legal problems that arise in the process of enforcing standards—both in the traditional corporate context and in the emerging realm of PBCs. Additionally, it describes the heightened need for uniformity in standard setting, particularly in the PBC context, and argues that antitrust enforcement of a uniform, blockchain-based certification system should be done sparingly in order to foster the procompetitive effects of such a system. Finally, Part III proposes a path forward for harnessing this technology, and Part IV concludes.

20. *See infra* Part III.

I. BACKGROUND

A. The Growing Market for Social and Environmental Sustainability and the PBC

Market demand for products made through responsible production processes grew substantially in the past few decades.[21] Consumers place great value on sustainability, so much so that an entire sustainability market recently emerged, even during a period of economic downturn.[22] For example, in 2011, the year of lowest production for the construction industry during the economic recession,[23] "construction of eco-friendly single-family homes represented an impressive 17 percent . . . of the overall American residential construction market," in contrast to its claim of 2 percent of the market in 2005 and 8 percent in 2008.[24] "[T]he number is expected to rise to as high as 38 percent within the next four years and represent a market share of $87 billion to $114 billion."[25] In addition, the popularity of "fair trade" products gained prominence in the early 2010s, even as those products commanded higher prices when christened with the fair trade label.[26]

Demand for corporate social responsibility exists not just in the consumer market but also in the investment market. BlackRock is a

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21. *See* Tensie Whelan & Carly Fink, *The Comprehensive Business Case for Sustainability*, HARV. BUS. REV. (Oct. 21, 2016), https://hbr.org/2016/10/the-comprehensive-business-case-for-sustainability [https://perma.cc/TT7Z-8K4S].

22. *See id.*

23. *Real Value Added by Private Industries: Construction*, FRED: ECON. RES., https://fred.stlouisfed.org/series/RVAC [https://perma.cc/EM2E-U3BW] (last visited Dec. 21, 2017).

24. Matt Hickman, *Study: Demand for Green Home Building and Remodeling on the Rise*, MOTHER NATURE NETWORK (Feb. 13, 2012, 7:29 PM), http://www.mnn.com/your-home/at-home/blogs/study-demand-for-green-home-building-and-remodeling-on-the-rise [https://perma.cc/PAW7-Z9GZ], *quoted in* Roberts, *supra* note 11, at 150 n.255.

25. *Id.*

26. *See* Rebecca Smithers, *Global Fairtrade Sales Reach £4.4bn Following 15% Growth During 2013*, GUARDIAN (Sept. 3, 2014, 11:23 AM), https://www.theguardian.com/global-development/2014/sep/03/global-fair-trade-sales-reach-4-billion-following-15-per-cent-growth-2013 [https://perma.cc/9YFN-R4W5]; *see also* Sarah Butler, *Ethical Shopping Growing in Popularity, Survey Suggests*, GUARDIAN (Aug. 19, 2013, 12:38 PM), https://www.theguardian.com/business/2013/aug/19/ethical-shopping-growing-popularity-fairtrade [https://perma.cc/XC6U-6ZFD] ("British shoppers are three times more likely to choose environmentally friendly products than they were in 2011, despite the squeeze on their incomes. A quarter of UK consumers said they would take the green option even if it cost them more money, up from 8% 17 months earlier . . . . The UK trend reflects a global surge in interest in environmentally friendly products with the proportion of consumers prepared to pay more to protect the natural world more than doubling to 46% last autumn from 22% in spring 2011."). For a discussion of the importance of labeling, see discussion *infra* Parts I.B, II.A.

firm that manages more than $6 trillion in investments, including $1.7 trillion in active funds, and on January 16, 2018, its founder and chief executive officer (CEO) made headlines by sending an open letter to CEOs of major public companies.[27] The letter emphasized that "[c]ompanies must benefit all of their stakeholders, including shareholders, employees, customers, and the communities in which they operate"[28] and reminded CEOs that "BlackRock can choose to sell the securities of a company [in its active funds] if [it is] doubtful about its strategic direction or long-term growth" and that it planned to engage more with the companies in BlackRock's index funds.[29] Fink stated that for companies "[t]o sustain [their financial performance], [they] must also understand the societal impact of [their] business[es] as well as the ways that broad, structural trends—from slow wage growth to rising automation to climate change—affect [their] potential for growth."[30] While some view corporate statements about contributing to society as "marketing gimmick[s] aimed at raising profits or appeasing regulators,"[31] the statement is consistent with other ways that BlackRock has worked to influence corporate policy in recent years.[32] Moreover, impact investment—that is, investment from which the expected returns include social and environmental, as well as financial, benefits[33]—was a growing area even before Fink's letter. Total investment in "some form of Socially Responsible Investing" was already reported to be around $3.7 trillion in the United States.[34] In a 2017 survey, 205 respondents from the financial

27. Andrew Ross Sorkin, *BlackRock's Message: Contribute to Society, or Risk Losing Our Support*, N.Y. TIMES: DEALBOOK (Jan. 15, 2018), https://www.nytimes.com/2018/01/15/business/dealbook/blackrock-laurence-fink-letter.html [https://perma.cc/USC6-HWH6]; Larry Fink, *Larry Fink's Annual Letter to CEOs: A Sense of Purpose*, BLACKROCK, https://www.blackrock.com/corporate/en-us/investor-relations/larry-fink-ceo-letter [https://perma.cc/MM4Z-JS2G] (last visited Jan. 28, 2018).

28. Fink, *supra* note 27.

29. *Id.*

30. *Id.* (stating further that BlackRock "will continue to emphasize the importance of a diverse board" because "[b]oards with a diverse mix of genders, ethnicities, career experiences, and ways of thinking have, as a result, a more diverse and aware mindset. They are less likely to succumb to groupthink or miss new threats to a company's business model. And they are better able to identify opportunities that promote long-term growth.").

31. Sorkin, *supra* note 27.

32. *See id.* (describing BlackRock's successful 2017 effort to support a shareholder proposal that would improve Exxon's climate disclosures).

33. *Impact Investing*, GLOBAL IMPACT INVESTING NETWORK, https://thegiin.org/impact-investing/ [https://perma.cc/QG86-E5FW] (last visited Dec. 21, 2017); ABHILASH MUDALIAR ET AL., GLOB. IMPACT INVESTING NETWORK, ANNUAL IMPACT INVESTOR SURVEY, at I (2017), https://thegiin.org/assets/GIIN_AnnualImpactInvestorSurvey_2017_Web_Final.pdf [https://perma.cc/GN5U-RK6W].

34. *Legal FAQS*, *supra* note 19; *see also FAQ: General Questions*, *supra* note 19.

industry said they made $22.142 billion in 7,951 "impact investments" in 2016 and had planned to invest $25.905 billion in 9,557 impact investments in 2017.[35]

Parallel to the growth in the demand for socially responsible products and services, the PBC has emerged as a new corporate form with a recent surge in popularity and recognition. As "for-profit companies that want to consider additional stakeholders, morals or missions in addition to making a profit for their shareholders,"[36] PBCs explicitly derive investment value from an expanded corporate purpose to operate in a socially responsible way.[37] At least three thousand companies,[38] including such household names as Patagonia and Kickstarter, have formed or reorganized as PBCs,[39] and experts expect PBCs to draw increasing levels of investment and consumer interest.[40] Thirty-four states—including Delaware[41]—and the District of Columbia[42] passed statutes authorizing the PBC, and six additional states are drafting similar legislation.[43] These statutes require PBCs to strive beyond the sole aim of maximizing value for shareholders; also, PBCs must fulfill additional reporting and disclosure requirements, including evaluations of "how well the corporation provides the requisite general public benefit."[44] Some statutes, such as the authorizing statute for PBCs in Delaware, require that the companies reveal the "standards the board of directors has adopted to

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35. MUDALIAR ET AL., *supra* note 33, at 4 tbl.2.

36. *FAQ: General Questions*, *supra* note 19.

37. *Id.* ("Benefit Corporations . . . have an expanded purpose beyond maximizing share value to explicitly include general and specific public benefit."); *Legal FAQS*, *supra* note 19 ("Benefit corp[oration]s create an attractive investment opportunity for the same nearly 70 Million [sic] 'conscious consumers' that have fueled organics, fair trade, and 'buy local,' while enjoying a form of inoculation from the short-termism that plague public equity markets. . . . Does benefit corporation status make it more difficult to raise money? No. Benefit corporations are attractive to a large and growing market for socially responsible and impact investments.").

38. *Benefit Corporations Raising Capital*, BENEFIT CORP., http://benefitcorp.net/benefit-corporations-raising-capital [https://perma.cc/7YMK-JX9K] (last visited Dec. 21, 2017).

39. *Find a Benefit Corp*, BENEFIT CORP., http://benefitcorp.net/businesses/find-a-benefit-corp?field_bcorp_certified_value=&state=&title=&submit2=Go&sort_by=title&sort_order=ASC&op=Go&page=4 [https://perma.cc/X2C5-L4NR] (last visited Dec. 21, 2017).

40. *Legal FAQS*, *supra* note 19; *see also FAQ: General Questions*, *supra* note 19.

41. DEL. CODE ANN. tit. 8, §§ 361–368 (West 2017).

42. D.C. CODE §§ 29-1301.01 to -1304.01 (2017).

43. *See State by State Status of Legislation*, BENEFIT CORP., http://benefitcorp.net/policymakers/state-by-state-status [https://perma.cc/VFU6-BYFP] (last visited Dec. 21, 2017).

44. John Montgomery, *Mastering the Benefit Corporation*, A.B.A.: BUS. L. TODAY (July 2016), https://www.americanbar.org/publications/blt/2016/07/02_montgomery.html [https://perma.cc/37GA-6S3S].

measure the corporation's progress in promoting such public benefit,"[45] and "an assessment of the corporation's success in meeting the objectives and promoting such public benefit."[46] However, the Delaware law does not require that these statements be made public or that the standards and certifications used to assess the purported public benefit be "a third-party standard."[47]

In addition to the legal corporate form of the PBC, companies and entities may also or alternatively qualify for "B Corp" certification.[48] The nonprofit organization B Lab will bestow this qualification on companies if they "commit to meeting certain standards of overall social and environmental performance on an ongoing basis."[49] The B Corp certification may allow companies to capitalize on the same market for social responsibility as legal PBCs because both are seen as advancing the goal of "us[ing] the power of business for the higher purpose of solving society's most challenging problems."[50]

As the consumer market for sustainably and responsibly sourced products and services and the investor market for shares in companies that engage in these responsible practices continue to expand, the stakes grow higher for interested parties to be able to verify that these business practices are as responsible as purported. However, B Corp certification does not legally bind directors through their fiduciary duties, and legal PBCs are not necessarily required to meet third-party standards.[51] This raises the question of how

45. DEL. CODE ANN. tit. 8, § 366(b)(2).

46. *Id.* § 366(b)(4).

47. *Id.* § 366(c)(2), (3) ("The certificate of incorporation or bylaws of a public benefit corporation may require that the corporation: . . . (2) Make the statement [required by statute to describe the PBC's promotion of a public benefit] available to the public; and/or (3) Use a third-party standard in connection with and/or attain a periodic third-party certification addressing the corporation's promotion of the public benefit[.]").

48. PATAGONIA WORKS, ANNUAL BENEFIT CORPORATION REPORT 3, 15 (2013), http://www.patagonia.com/on/demandware.static/Sites-patagonia-us-Site/Library-Sites-PatagoniaShared/en_US/PDF-US/bcorp_annual_report_2014.pdf [https://perma.cc/9KDN-AT2S]; *Benefit Corporations & Certified B Corps*, BENEFIT CORP., http://benefitcorp.net/businesses/benefit-corporations-and-certified-b-corps [https://perma.cc/7QWM-7RE7] (last visited Nov. 14, 2017) ("Patagonia . . . [is an] exampl[e] of [a] benefit corporatio[n] that subsequent[t to incorporation under the PBC authorizing statute also] became [a] Certified B Corporatio[n] because [it] felt the certification had additional value.").

49. *A Corporate Paradigm Shift: Public Benefit Corporations*, GIBSON, DUNN & CRUTCHER (Aug. 9, 2016), http://www.gibsondunn.com/publications/Pages/Corporate-Paradigm-Shift-Public-Benefit-Corporations.aspx [https://perma.cc/E7CF-JWNT].

50. *Benefit Corporations & Certified B Corps*, *supra* note 48.

51. *Id.* ("While many benefit corporations use the B Impact Assessment to create a free benefit report, benefit corporations do not need to reach a particular score, nor have their

directors of PBCs and B Lab go about verifying that the corporations or the certified companies have met an acceptable threshold for sufficiently responsible business practices. In short, what are the standards, and how are they verified?

B. Standards, Certification, and Labeling Systems

Commentators have defined "standard" to mean "something taken for a basis of comparison, or that which is accepted for current use through authority, custom, or general consent,"[52] or as "any set of technical specifications that either provides or is intended to provide a common design for a product or process."[53] The National Research Council, meanwhile, defines a "standard" as "a set of characteristics or quantities that describes features of a product, process, service, interface, or material."[54] Furthermore, Justice Stephen Breyer believes that agencies should distinguish between performance and design standards.[55] In his book *Regulation and Its Reform*, then-Judge Breyer described the difference between the two in the following terms:

> A design standard specifies precisely how, say, a machine must be built. . . . A performance standard, by contrast, states its obligations in terms of ultimate goals that must be achieved. The firm then is free to achieve these goals in any appropriate way. . . . In principle, design standards are easier to enforce than performance standards. . . . On the other hand, design standards limit the firm's flexibility.[56]

Performance standards exemplify standards that are "inclusive" and allow for multiple methods for reaching the same goal.[57] Sometimes, reevaluation of the standard after it has already been implemented becomes necessary.[58] There is the risk that a "lock-in" effect may

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performance verified or audited by B Lab, or anyone else."); *see also, e.g.*, DEL. CODE ANN. tit. 8, § 366.

52. Harry S. Gerla, *Federal Antitrust Law and Trade and Professional Association Standards and Certification*, 19 U. DAYTON L. REV. 471, 472 (1994) (quoting DAVID HEMENWAY, INDUSTRYWIDE VOLUNTARY PRODUCT STANDARDS 8 (1975)).

53. Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CALIF. L. REV. 1889, 1896 (2002).

54. NAT'L RESEARCH COUNCIL, STANDARDS, CONFORMITY ASSESSMENT, AND TRADE: INTO THE 21ST CENTURY 9 (1995).

55. STEPHEN G. BREYER, REGULATION AND ITS REFORM 105 (1982).

56. *Id.*

57. David J. Teece & Edward F. Sherry, *Standards Setting and Antitrust*, 87 MINN L. REV. 1913, 1934 (2003) ("For example, many health and safety standards are 'inclusive' in the sense that quite different products (e.g., wood, aluminum, and fiberglass ladders) can all satisfy the standard.").

58. *Id.* at 1936.

occur because changing a standard after implementing it costs more than an ex ante choice between alternative standards.[59]

As discussed below, numerous types of entities can create standards for many different contexts and purposes. Government regulators create mandatory compliance standards, but companies sometimes also have a hand in creating voluntary compliance standards. Once a standard is established, "certification" involves the "decision on whether a particular product, service, or provider meets the standard."[60] Therefore, the crucial step for the modern sustainability market is in verifying and communicating to customers the companies' compliance with trusted standards concerning the social or environmental responsibility underlying the production or provision of the good or service. In many industries, the primary method of communicating to consumers that products have been certified as meeting established standards is through labeling, such as the fair trade label.[61] Therefore, such a system of certifying and communicating compliance with a production standard should also be standardized to ensure that products across a spectrum of companies genuinely comply and are not "greenwashed" or "fairwashed."[62] For reasons discussed below, voluntary standard setting would be an effective method of ensuring social and environmental conscientiousness in business behavior, and a uniform blockchain-based system would provide the ideal characteristics for verifying compliance with such standards.

1. The Economic Rationale for Voluntary Standard Setting

Private standards systems can mitigate several market failures associated with businesses' externalities and transaction costs. Economist Arthur Pigou theorized that taxing activities that produce negative externalities would reduce the social cost of those activities by increasing the price of the resulting product.[63] The increase in price would lower demand, production, and, in turn, the overall social cost of the activity.[64] Ronald Coase further theorized that in a world in which no transaction costs arose from negotiating an exchange,

59. *Id.* at 1937–38.

60. Gerla, *supra* note 52, at 473.

61. *See infra* Part II.A.

62. Roberts, *supra* note 11, at 147; CBS Miami, *Fair Trade Products Grow in Popularity Along with Fakes*, FAIR WORLD PROJECT (Aug. 17, 2011), http://fairworldproject.org/in-the-news/fair-trade-products-grow-in-popularity-along-with-fakes/ [https://perma.cc/B6DH-AAAT].

63. Roberts, *supra* note 11, at 112. *See generally* A. C. PIGOU, THE ECONOMICS OF WELFARE (4th ed. 1932).

64. Roberts, *supra* note 11, at 112.

"parties will exchange entitlements until a Pareto efficient allocation occurs."[65] However, in contrast to this Coasian ideal, "no one makes an assumption of no transaction costs in practice."[66] Therefore, according to Guido Calabresi and Douglas Melamed, when entitlements are allocated in pursuit of a Pigouvian reduction in the social costs of an activity, costs should fall on the "cheapest cost avoider"—meaning the party in the best position to avoid, rather than externalize, the cost.[67] For example, the cost should fall on the party in the best position to minimize pollution or instate socially beneficial labor practices.[68]

The government is not always effective in determining the proper entity or extent at which to tax.[69] Therefore, when the government fails to fully address negative externalities through a tax that would internalize them, the party in the best position to avoid these negative externalities is the "best briber,"[70] or the "party that can, with the lowest transaction costs, use trade to correct an error in entitlements[:] . . . [that is,] the party that can most cheaply correct a misallocation of entitlements."[71] By allocating costs in this way, Pareto efficiency is more likely to be achieved.[72] In the context of the market for consumer goods, consumers are the best bribers because they are in the best position to "negotiate a trade" with the producers.[73] Producers are the cheapest cost avoiders because they have direct control over their supply chains.[74]

Voluntary, private standards and certifications—communicated to consumers through labeling—mitigate market failures by easing consumers' negotiations with producers for trades of entitlements in several ways. First, these standards and certifications

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65. R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960), *cited in* Roberts, *supra* note 11, at 112. Pareto efficiency is the common metric by which economists determine the presence of waste. It is achieved when transactions make at least one party better off without making another party worse off. *See, e.g.*, Roberts, *supra* note 11, at 112 n.24.

66. Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1096 (1972), *cited in* Roberts, *supra* note 11, at 113.

67. *Id.* at 1119, 1127, *cited in* Roberts, *supra* note 11, at 114–15.

68. *See id.* at 1096–97; *see also* Roberts, *supra* note 11, at 114–15.

69. *See, e.g.*, Roberts, *supra* note 11, at 137 ("When there are competing values at stake, governments may allocate entitlements in ways that may be contrary to the desires of much of the public.").

70. GUIDO CALABRESI, THE COSTS OF ACCIDENTS 150 (1970), *cited in* Roberts, *supra* note 11, at 115.

71. Roberts, *supra* note 11, at 114–15.

72. *Id.* at 115.

73. *Id.* at 117 n.47, 120.

74. *Id.*

"facilitat[e] communication between . . . parties" by lowering the otherwise prohibitive transaction costs that consumers face in overcoming information asymmetries and ascertaining companies' methods of production, such as the labor practices implemented in producing their clothing or the pesticides applied in growing their vegetables.[75] When information asymmetry prevents consumers from knowing before purchasing a good whether it has been produced using responsible methods, they cannot "reward or sanction the seller through their repeat business and influence on others. . . . This is a market failure."[76] In contrast, when enough information is available on both sides of this trade—that is, when there is information symmetry—the trade will more likely meet each party's needs and preferences to the point of Pareto efficiency.[77]

In addition, standards, certification, and labeling address the market failure of collective action problems, which exist on both the demand and supply side. On the demand side, consumers must form a large enough demand bloc in order to incentivize producers to take on the costs of implementing favorable production practices.[78] For large numbers of disperse consumers, this is a difficult feat, especially when these collective action problems are exacerbated by information asymmetry. On the supply side, producers must aggregate supply in order to "sustain demand over time and reduce the price per unit to a level that would be within reach for the average consumer."[79] Standards create a mutually-agreed-upon baseline for producers to meet in order to consistently cater to consumers with certain needs and preferences, while trustworthy certification diminishes producers' ability to engage in fraud "by selling goods of a different quality, quantity or type than the buyers think they are purchasing."[80]

However, a moral hazard arises in the context of voluntary standard setting and compliance. Voluntary standards could lead to fraud and unfair misrepresentation, such as in organizations that use advertising and labels to claim adherence to environmental and social standards while failing to take meaningful action to address these concerns, a practice known as "greenwashing"[81] or "fairwashing."[82]

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75. *Id.* at 120.

76. *Id.* at 123.

77. *Id.* at 120 (citing Calabresi & Melamed, *supra* note 66, at 1096–97).

78. *Id.* at 121.

79. *Id.* at 118.

80. *Id.* at 118, 123.

81. *Id.* at 147.

82. CBS Miami, *supra* note 62 ("'What's going right now on [sic] in the Fair Trade Industry is what we're calling 'fairwashing.' It's a play off of the term 'greenwashing,' where some companies are claiming to be Fair Trade and may not necessarily be Fair Trade so the onus

The "clean diesel" scandal,[83] in which VW admitted to outfitting its vehicles with devices meant to cheat state emissions tests,[84] was such a deceitful example of greenwashing[85]—as well as blatantly illegal behavior—that officials arrested company executives on conspiracy charges.[86] However, most greenwashing is not nearly so overt and instead arises from subtle distinctions between marketing messages and the realities of a product.[87] For example, in 2014 one sustainable business journalist described plant-based plastics used in Coca-Cola's PET "PlantBottle" and Cargill's "NatureWorks" bioplastic as examples of greenwashing.[88] According to the journalist, the "biggest downside of bioplastic is that it has been introduced to consumer products with a heaping dose of confusing marketing" regarding the makeup and recyclability of these plastics.[89] For instance, "non-compostable plastic is branded as if it were compostable (what do you think when you hear

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falls on the consumer to ask the right questions, find out why is it Fair Trade, what makes it Fair Trade?' explained Megy Karydes of World Shoppe.com.").

83. Hiroko Tabuchi, Jack Ewing & Matt Apuzzo, *6 Volkswagen Executives Charged as Company Pleads Guilty in Emissions Case*, N.Y. TIMES (Jan. 11, 2017), https://www.nytimes.com/2017/01/11/business/volkswagen-diesel-vw-settlement-charges-criminal.html?_r=0 [https://perma.cc/P3GN-LHZW] ("Volkswagen also formally pleaded guilty to charges of conspiracy to commit wire fraud and to violate the Clean Air Act, customs violations and obstruction of justice. Many of the 600,000 cars in the United States equipped with emissions-cheating software were imported from Germany or Mexico.").

84. *See supra* notes 1–10 and accompanying text.

85. *See, e.g.*, *Earth Day 2016: Seven Companies Accused of Greenwashing*, TRUTHINADVERTISING.ORG (Apr. 22, 2016), https://www.truthinadvertising.org/six-companies-accused-greenwashing/ [https://perma.cc/KY6V-7LXJ] ("There's nothing clean about diesel engines that spew pollutants at levels way over the legal limit. But that seems to be the scandal of the day in the automotive industry. . . . In March, the FTC became the third federal agency to get involved in the VW emissions scam, filing a false advertising lawsuit against Volkswagen Group of America seeking refunds for eco-minded consumers who purchased or leased an affected Volkswagen or Volkswagen-owned Audi between 2008 and 2015.").

86. Adam Goldman, Hiroko Tabuchi & Jack Ewing, *F.B.I. Arrests Volkswagen Executive on Conspiracy Charge in Emissions Scandal*, N.Y. TIMES (Jan. 9, 2017), https://www.nytimes.com/2017/01/09/business/volkswagen-diesel-emissions-investigation-settlement.html?_r=0 [https://perma.cc/NEG9-7YBN] ("The F.B.I. has arrested a Volkswagen executive in Florida, accusing him of playing a central role in a broad conspiracy to keep United States regulators from discovering that diesel vehicles made by the company were programmed to cheat on emissions tests. . . . The arrest of [the executive, Oliver] Schmidt[,] is an escalation of the criminal investigation into emissions cheating by Volkswagen and comes amid talks between the company and the United States Justice Department about what penalties the carmaker should accept as part of a settlement.").

87. *See* Mary Catherine O'Connor, *Five Sustainable Boondoggles: Greenwashing All the Way to the Bank*, GUARDIAN (Aug. 25, 2014, 7:00 PM), https://www.theguardian.com/sustainable-business/2014/aug/25/5-sustainability-greenwash-products-ecofriendly-boondoggles-design [https://perma.cc/TF84-PXRF].

88. *Id.*

89. *Id.*

'PlantBottle'?), and non-recyclable bioplastic is positioned as a seamless swap-in for oil-based cups and clamshells."[90] Therefore, the crucial economic role that voluntary standards systems fill must be supplemented with reliable and accountable certification.

2. The Legal Role of Voluntary Standard Setting

In addition to addressing market failures, voluntary standard setting can fill gaps left by legal limitations that arise when standard setting is left to government regulation. One gap in the effectiveness of governmental regulation is the "jurisdictional disjunction"[91] in enforcement, which occurs when a firm's supply chain extends beyond the reach of any one legal authority. In this situation, "[t]he government agency petitioned by those harmed may have only incomplete authority over the subject matter or the persons, places or goods involved in the dispute."[92] Furthermore, the "aggrieved parties may not have access to or the right to summon the authority of the governing body that has jurisdiction over the individuals or firms causing the impacts."[93] In the modern world, virtually no consumer buys a product that is completely untouched by some aspect of a supply chain of global, or at least transnational, proportions.[94]

In addition to jurisdictional limits to enforcement, governments also face restrictions concerning how they may regulate within their jurisdictions.[95] World Trade Organization (WTO) rules prohibit states from instating measures, known as "Technical Barriers to Trade," that have a discriminatory effect on "like" products being imported into a member country.[96] That is, member countries must accord national

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90. *Id.* ("Core to the confusion is a major bifurcation among bioplastics. Some—such as Coca-Cola's PET 'PlantBottle'—are chemically identical to conventional plastic but use (around 30%) plant-based feedstocks. These are recyclable, which would be more encouraging if the PET recycling rate in the US was higher than its paltry 25%. Other material—such as Cargill's 'NatureWorks' bioplastic—is derived from fermented plant sugars that are plasticized into polylactide (PLA). These are not recyclable. But they are compostable—though only in industrial composting facilities, not in your backyard garden pile.").

91. Roberts, *supra* note 11, at 134 ("Jurisdictional disjunction describes the situation where the geography of the firms, the resources or the harms to be regulated and the jurisdiction of the state or agency that seeks to regulate them may not align.").

92. *Id.* at 134–35.

93. *Id.* at 135.

94. *See* DANIEL C.K. CHOW & THOMAS J. SCHOENBAUM, INTERNATIONAL BUSINESS TRANSACTIONS: PROBLEMS, CASES, AND MATERIALS 12–15 (3d ed. 2015).

95. Roberts, *supra* note 11, at 134–35.

96. Agreement on Technical Barriers to Trade art. 2.1, Jan. 1, 1995, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S. 120 [hereinafter TBT Agreement]; Marrakesh Agreement Establishing the World Trade Organization, pmbl., Apr. 15, 1994, 1867 U.N.T.S. 154; General Agreement on Tariffs and Trade,

treatment to like products by agreeing not to instate laws or regulations in their own countries that prohibit or place price premiums on foreign products entering their domestic commerce. Additionally, the WTO requires member countries to include most favored nation clauses in their trade agreements, thus preventing one nation's products from receiving more favorable treatment than another's.[97] Though the WTO agreements acknowledge the importance of certain environmental concerns,[98] parties to the WTO may not distinguish between goods based on process and production methods, which might include the levels of greenhouse gas (GHG) emissions made during such production or during other aspects of socially and environmentally responsible production[99]:

> Distinctions based on whether the goods were extracted, harvested or manufactured under humane or inhumane conditions, using fair labor practices or child and slave labor, or adhering to environmental controls or causing environmental harm, would all be classified as process distinctions.[100]

Therefore, a country cannot impose an internal tax, border tariff, or quantitative restriction on imported products based on considerations about their process of production, such as the environmental concern of their level of GHG emissions.[101]

Private entities, however, do not fall under WTO jurisdiction because WTO agreements bind only member states.[102] Therefore, the limited ability of governments to regulate the introduction into national commerce of internationally produced goods based on their production processes can best be remedied through consumers' prerogative to "vote" with their dollars.[103] To exercise such power,

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art. 3, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194 [hereinafter GATT]; *see also* Roberts, *supra* note 11, at 137–38.

97. TBT Agreement, *supra* note 96, art. 2.1; GATT, *supra* note 96, art. 3; *see also* Susy Frankel & Daniel Gervais, *Plain Packaging and the Interpretation of the TRIPS Agreement*, 46 VAND. J. TRANSNAT'L L. 1149, 1152 (2013); Roberts, *supra* note 11, at 138.

98. *See, e.g.*, GATT, *supra* note 96, art. 20.

99. *See* TBT Agreement, *supra* note 96, annex 1(1) (defining the "technical regulations" governed by Article 2.1 to include those related to "process and production methods"); *see also* Roberts, *supra* note 11, at 138.

100. *See, e.g.*, *id.*

101. GATT, *supra* note 96, arts. 1–3, 11; Roberts, *supra* note 11, at 138.

102. GATT, *supra* note 96, art. 1; *see also* Roberts, *supra* note 11, at 138–39.

103. Roberts, *supra* note 11, at 139 ("[W]hen competing values relating to health, safety and the environment require regulation, and when international trade agreements would otherwise bar action by a nation state or its organs, the public has employed voluntary standards, certification and labeling systems to meet the demand for governance. By taking their concerns out of the governmental and legislative processes and creating a new institution outside of those contexts, the proponents and developers of these institutions have circumvented entrenched interests and political barriers." (footnote omitted)).

consumers must be able to efficiently learn reliable information about the international supply chains of huge, global companies. Blockchain technology has emerged as a way to ascertain and communicate this information.

C. Blockchain Technology

Blockchain technology has been described as "[t]he great chain of being sure about things."[104] In the age of the "sharing economy"[105] and "online trust,"[106] a process in which distant, unfamiliar individuals independently verify the validity or reliability of a transaction is not entirely unheard-of. Online review systems drive businesses such as Uber and Airbnb.[107] Rather than writing a review about a person's ride or stay that anyone may access to determine the quality of a driver or host, blockchain technology virtually guarantees validity and reliability through several features. The first important feature of blockchain technology is transparency.[108] A blockchain records and time-stamps transactions in "blocks" that anyone with access to the online network may view to verify that the transaction actually occurred.[109] A second important blockchain feature is decentralization.[110] A blockchain is split up and distributed over all computers across its network rather than being stored and supervised by a central intermediary.[111] Finally, a key feature of blockchain

104. *The Great Chain of Being Sure About Things*, ECONOMIST (Oct. 31, 2015), https://www.economist.com/news/briefing/21677228-technology-behind-bitcoin-lets-people-who-do-not-know-or-trust-each-other-build-dependable [https://perma.cc/GW63-MAH6]; *see also* Rachel Bostman, *We've Stopped Trusting Institutions and Started Trusting Strangers*, TED (June 2016) (citing *The Great Chain of Being Sure About Things*, *supra*), https://www.ted.com/talks/rachel_botsman_we_ve_stopped_trusting_institutions_and_started_trusting_strangers [https://perma.cc/9H27-4ENT].

105. *See* Abbey Stemler, *Regulation 2.0: The Marriage of New Governance and* Lex Informatica, 19 VAND. J. ENT. & TECH. L. 87, 110–14 (2016); *The Rise of the Sharing Economy*, ECONOMIST (Mar. 9, 2013), https://www.economist.com/news/leaders/21573104-internet-everything-hire-rise-sharing-economy [https://perma.cc/46RR-PRKX].

106. Bostman, *supra* note 104.

107. *See* Abbey Stemler, *Feedback Loop Failure: Implications for the Self-Regulation of the Sharing Economy*, 18 MINN. J.L. SCI. & TECH. 673, 674–75 (2017); Bostman, *supra* note 104.

108. Mark Fenwick, Wulf A. Kaal & Erik P.M. Vermeulen, *Legal Education in the Blockchain Revolution*, 20 VAND. J. ENT. & TECH. L. 351, 363–65 (2017).

109. *See id.* at 365–66; *see also* Collin Thompson, *How Does the Blockchain Work? (Part 1)*, BLOCKCHAIN REV. (Oct. 2, 2016), https://medium.com/blockchain-review/how-does-the-blockchain-work-for-dummies-explained-simply-9f94d386e093 [https://perma.cc/3MS9-7PG7].

110. *See* Fenwick, Kaal & Vermeulen, *supra* note 108, at 363–67, 369–71; *see also* Thompson, *supra* note 109.

111. *See* Fenwick, Kaal & Vermeulen, *supra* note 108, at 363–67, 369–71; *see also* Thompson, *supra* note 109.

technology is its immutability.[112] Information about transactions stored on a blockchain is essentially tamperproof.[113] Individual members of the network, known as "miners,"[114] contribute their computers' power to digitally sign each new block via complex cryptography, known as "hashing,"[115] and repeatedly check the blockchain against previous versions. Inconsistent blocks—such as those created by someone trying to hack and alter a transaction—are automatically discarded by the system. Miners typically receive a financial incentive for contributing their computer's power.[116]

Blockchain's role as the basis of the Bitcoin cryptocurrency thrust it into prominence and created a widespread fascination with its potential for other uses.[117] Bitcoin uses blockchain to "allow online payments to be sent directly from one party to another without going through a financial institution."[118] When a user accessing the blockchain from his or her computer validates a transaction, that new transaction gets added to information stored in a "block," which gets linked to older transaction "blocks" containing information about all previous transactions.[119] A chain of blocks is thereby traceable back to its first transaction.[120] In essence, this chain of data is "really just a ledger" in which "all interested parties run copies of the ledger and

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112. *See* Fenwick, Kaal & Vermeulen, *supra* note 108, at 364–65, 367, 374; *see also* Thompson, *supra* note 109.

113. *See* Thompson, *supra* note 109.

114. *Id.*

115. *See* Fenwick, Kaal & Vermeulen, *supra* note 108, at 367; Rob Marvin, *Blockchain A–Z: Everything You Need to Know About the Game-Changing Tech Beneath Bitcoin*, PCMAG (June 3, 2016, 4:18 PM), https://www.pcmag.com/article/344969/blockchain-a-z-everything-you-need-to-know-about-the-game-c [https://perma.cc/TH73-Y4UX].

116. Thompson, *supra* note 109. In the case of the Bitcoin blockchain, miners could create and receive new bitcoins over time. *Id.*

117. Victor Li, *Bitcoin's Blockchain Technology Being Used in Business, Finance and Contracts*, A.B.A. J. (Mar. 1, 2016), http://www.abajournal.com/magazine/article/bitcoins_underlying_technology_blockchain_gains_use_in_business_finance_and [https://perma.cc/X84A-TWKT] ("For many people, their introduction to the digital currency bitcoin came when federal agents shut down online black market Silk Road. . . . While bitcoin is a relatively recent phenomenon, blockchain is old news and has been around since the 1990s. It wasn't really used for much until bitcoin came around. . . . Now many financial tech companies are using blockchain, and nearly every major bank is investing in it."); Luke Parker, *AID: Tech Offers Blockchain Solutions to Help United Nations and European Commission with Refugee Problems*, BRAVE NEW COIN (Oct. 2, 2016), http://bravenewcoin.com/news/aidtech-offers-blockchain-solutions-to-help-united-nations-and-european-commission-with-refugee-problems/ [https://perma.cc/B844-G4GQ].

118. SATOSHI NAKAMOTO, BITCOIN: A PEER-TO-PEER ELECTRONIC CASH SYSTEM 1 (2008) https://bitcoin.org/bitcoin.pdf [https://perma.cc/2BSF-2S7W].

119. Thompson, *supra* note 109.

120. *Id.*

contribute to it and add entries to the ledger in a systematic way."[121] However, unlike a traditional ledger in which one supervisory party keeps track of everything and controls access to the ledger, a public blockchain ledger is, as explained above, "transparent and immutable"[122] and widely accessible. Blockchain technology could have a useful purpose in the realm of corporate social responsibility.

II. ANALYSIS

The business world demonstrates an increasing acceptance of and preference for corporate leadership that acts with societal and environmental welfare, in addition to shareholder value, in mind.[123] The growing demand for sustainable products and services, the corresponding changing practices and priorities of traditional corporations, and the emergence of the PBC corporate form all signal this shift.[124] Scholars and commentators have identified the resulting complications that could arise in both law and business practice.[125] As one corporate law professor wrote in the *New York Times* regarding PBCs, "the eye-grabbing do-gooding may mask deep, complicated issues. First, in a public benefit corporation, the benefit can be hard

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121. Li, *supra* note 117.

122. *Id.*; *see also* Fenwick, Kaal & Vermeulen, *supra* note 108, at 364–65 ("Blockchain technology eliminates the need for intermediation by incentivizing direct transactions—including compensation—between the creator and consumer. Blockchain technology creates a platform for trust through truth and transparency between parties. Because the blockchain (at least the public blockchain) is in fact public and immutable, the technology increases transparency while at the same time significantly reducing transaction costs. . . . Some refer to it as a giant, worldwide, distributed, immutable 'Google spreadsheet' for transactions." (footnotes omitted)).

123. *See supra* Part I.A.

124. *See, e.g.*, Sorkin, *supra* note 14; *see also supra* Part I.A.

125. *See, e.g.*, Steve A. Peirce, *Adding "Public Benefit" to the Bankruptcy Mix Raises Thorny Issues*, FED. LAW., May–June 2014, at 18–19 ("Interesting issues could arise if a public benefit corporation becomes insolvent or files bankruptcy. . . . In the case of an insolvent public benefit corporation, one might argue . . . that a creditor would have standing to file a derivative action. But what of § 367 [of Title 8 of the Delaware Code], limiting derivative action standing to shareholders with certain ownership levels? Would § 367 foreclose any creditor derivative action? Could an argument be made that creditors are among the public benefit constituents or that they are persons 'materially affected'? Under that argument, would § 365(b), providing for no duty to those nonshareholder constituents, foreclose any action by creditors? . . . With the advent of public benefit corporations, the priorities of the various corporate stakeholders get a little more complicated, and it will be interesting to see how the courts sort this out."); *see also* Tiffany M. Burba, *To "B" or Not to "B": Duties of Directors and Rights of Stakeholders in Benefit Corporations*, 70 VAND. L. REV. EN BANC 87, 87 (2017), https://s3.amazonaws.com/vu-wp0/wp-content/uploads/sites/89/2017/04/20131135/To-%E2%80%9CB%E2%80%9D-or-not-to-%E2%80%9CB%E2%80%9D-Duties-of-Directors-and-Rights-of-Stakeholders-in-Benefit-Corporations.pdf [https://perma.cc/Q328-99DQ] ("Although this corporate form adequately responds to consumers' weariness of 'big business' and attracts shareholders who value social responsibility more than short-term gains, it raises questions regarding benefit enforcement.").

to define."[126] Because of the disparate ideas of what this definition should be, commentators argue that the PBC form is not practical for publicly traded companies or those that want to go public.[127] Furthermore, in the context of traditional corporations that claim to espouse sustainable business practices, that claim can be difficult to verify. In response to these issues, the method by which corporations and PBCs measure their social and environmental impact may need a greater degree of uniformity. Moreover, in the process of establishing this uniformity, proponents must consider the antitrust issues inherent in industry-wide agreements.[128]

A. The Need for Uniformity in Standard and Certification Systems

1. The General Corporate Context

The ability of voluntary standard, certification, and labeling systems to fill the gaps left by governmental regulation is undermined when there are many dispersed forms of such standards among which consumers are unable to distinguish or meaningfully evaluate.[129] The need for homogenization of standard certification has already been recognized on the international level, and efforts have begun to

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126. Steven Davidoff Solomon, *Idealism That May Leave Shareholders Wishing for Pragmatism*, N.Y. TIMES: DEALBOOK (Oct. 13, 2015), https://www.nytimes.com/2015/10/14/business/dealbook/laureate-education-for-profit-school-public-benefit.html?_r=0 [https://perma.cc/FB8X-3JEQ].

127. *Id.*; *see also* Lois Yurow, *Benefit Corporations and the Public Markets—Will We Ever See a Public Benefit Corporation?*, GOVERNANCE & ACCOUNTABILITY INST.'S SUSTAINABILITY UPDATE (Nov. 24, 2014), http://ga-institute.com/Sustainability-Update/2014/11/24/benefit-corporations-and-the-public-markets-will-we-ever-see-a-public-benefit-corporation/ [https://perma.cc/PV7X-Z77R].

128. *See generally* Alden F. Abbott, *US Government Antitrust Intervention in Standard-Setting Activities and the Competitive Process*, 18 VAND. J. ENT. & TECH. L. 225, 232–33 (2016).

129. *See, e.g.*, Ulf J. J. Hahnel et al., *The Power of Putting a Label on It: Green Labels Weigh Heavier Than Contradicting Product Information for Consumers' Purchase Decisions and Post-Purchase Behavior*, FRONTIERS PSYCHOL., Sept. 2015, at 1, 1, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4585300/ [https://perma.cc/2FLQ-W35J]; *see also* Clare D'Souza, Mehdi Taghian, Peter Lamb & Roman Peretiatko, *Green Decisions: Demographics and Consumer Understanding of Environmental Labels*, 31 INT'L J. CONSUMER STUD. 371, 372, 375 (2007), http://onlinelibrary.wiley.com/doi/10.1111/j.1470-6431.2006.00567.x/abstract [https://perma.cc/69SH-2HTF] ("Australian consumers appear to have poor knowledge regarding labels and label types. . . . To compound this, there have been ineffective advertising campaigns regarding environmental labels. . . . There are different types of environmental labels that consumers are exposed to on a daily basis, while some consumers may not be able to properly identify and understand them. . . . Industry groups argue that certification of third party green labels offers some positive benefits such as increased credibility and better forms of communications.").

consolidate the public, private, and hybrid standards requirements into a "common language."[130] These types of efforts constitute one response to the ongoing reality that the array of organizations and entities that establish standards, certification, and labeling systems remains highly complex.[131] These organizations and entities include private-sector organizations (both for-profit and nonprofit), governmental organizations, and organizations that are somewhere in between.[132]

Third-party, for-profit entities have emerged that strive to hold producers accountable for the environmental and social impacts of their production practices and supply chains.[133] For example, GoodGuide, Inc. aims to "rate products so that consumers can have instant access [through a website and an app] to credible information about products that would be very difficult for anyone to develop on their own."[134] However, the company's website admits that problems arise from information asymmetry and the difficulty of tracking a product's origins.[135] Despite "acquir[ing] data from over 1,000 different sources, including scientific institutions, governmental agencies, commercial data aggregators, nongovernmental organizations, media outlets and corporations," the GoodGuide website states that in many cases, "data that would be relevant for a thorough assessment of an important attribute is unavailable for a product."[136] Some gaps in GoodGuide's data exist because it has not yet found a credible source, and sometimes the data may not be not publicly available because "companies have not disclosed critical information."[137] The weaknesses in this data system, to which GoodGuide admits, illustrate some of the greater problems with a lack of uniform standards and certification systems and the important fact that the current system remains reliant on voluntary company disclosures.[138]

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130. INT'L TRADE CTR., MAKING SUSTAINABLE SUPPLY CHAINS A REALITY: TRADE FOR SUSTAINABLE DEVELOPMENT 5 (2015), https://www.wto.org/english/tratop_e/devel_e/a4t_e/global_review15prog_e/brochuresideevents19.pdf [https://perma.cc/ZMM3-DLTB].

131. *See id.*

132. Teece & Sherry, *supra* note 57, at 1917.

133. *See, e.g.*, *About GoodGuide*, GOODGUIDE, http://www.goodguide.com/about [https://perma.cc/7Z3Y-UZLL] (last visited Jan. 2, 2018).

134. *Id.*

135. *See GoodGuide's Data*, GOODGUIDE, http://www.goodguide.com/about/data [https://perma.cc/BDB8-Z9T8] (last visited Jan. 2, 2018).

136. *Id.*

137. *Id.*

138. *See id.*

Perhaps one of the most famous terms associated with the verification of corporate supply chain sustainability is "fair trade." High consumer recognition of the words "fair trade" on a label[139] demonstrates the extent to which voluntary standard setting can create a "market for resource protection and sustainable resource harvesting practices."[140] Large corporate producers such as Starbucks,[141] Whole Foods Market,[142] Bigelow Tea,[143] and Pottery Barn[144] benefit from some form of fair trade certification or labeling.[145] However, all fair trade labels are not the same. One product's fair trade label or mark could have been bestowed by a different organization than another product's fair trade label—for example, Fair Trade USA[146] resigned membership from the larger, international

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139. Paul Rice, *Our 2016 Almanac*, FAIR TRADE CERTIFIED (Sept. 25, 2017), https://www.fairtradecertified.org/news/2016-fair-trade-usa-almanac [https://perma.cc/L68H-GCBZ] ("Consumer awareness of [the Fair Trade USA] seal rose to 67%."); *see also Certify Your Products*, FAIRTRADE AM., http://www.fairtradeamerica.org/For-Business/Ways-of-Working-with-Fairtrade [https://perma.cc/F56D-HM2U] (last visited Jan. 27, 2018) ("The FAIRTRADE Mark is the most trusted and recognized ethical label in the world. According to a 2017 Globescan study of US consumers, 81% of them would view a brand they already buy more favorably if it carried the FAIRTRADE Mark.").

140. Roberts, *supra* note 11, at 130.

141. *All Fairtrade Products*, FAIRTRADE AM., http://www.fairtradeamerica.org/Fairtrade-Products/All [https://perma.cc/ZAD2-KMV2] (last visited Jan. 28, 2018) (listing "Starbucks Coffee Company" as a "produc[t] bearing the FAIRTRADE Mark" and describing the mark as "a clear direct link to the Fairtrade International system . . . [which involves] m[eeting] . . . social, economic, and environmental criteria").

142. Rice, *supra* note 139 ("This milestone [of certifing the first farm in the United States] builds on our successful produce partnerships with leading retailers like Whole Foods."); *see also All Fairtrade Products*, *supra* note 141 (listing "Whole Foods 365 brand sugar" and "Whole Foods (frozen asparagus)" as "products bearing the FAIRTRADE Mark").

143. *RC Bigelow Incorporated*, FAIR TRADE CERTIFIED, https://www.fairtradecertified.org/search/brands?key=bigelow [https://perma.cc/S5UR-UAEF] (last visited Jan. 28, 2018).

144. *Pottery Barn*, FAIR TRADE CERTIFIED, https://www.fairtradecertified.org/search/brands?key=%22pottery+barn%22 [https://perma.cc/3A3Z-WUAP] (last visited Jan. 27, 2018).

145. For some of Fair Trade USA's claims about its labels' benefits to businesses, see, for example, Rice, *supra* note 139 ("In 2016, the sale of Fair Trade Certified products in the U.S. reached an estimated $6 billion."). For similar claims by Fairtrade International, see *Why Go Fairtrade?*, FAIRTRADE AM., http://www.fairtradeamerica.org/For-Business/Why-Fairtrade [https://perma.cc/Z2JU-YKZP] (last visited Jan. 28, 2018) ("74% of customers would recommend Fairtrade products to a friend or colleague. . . . Fairtrade gives you: . . . Access to the Fairtrade International system with the ability to easily sell your Fairtrade labeled products in other markets.").

146. Rice, *supra* note 139 ("Fair Trade USA is the leading 501(c)(3) nonprofit, third-party certifier and promoter of Fair Trade products in North America. . . . Fair Trade USA has worked to . . . establis[h] the Fair Trade Certified seal as a respected and reliable brand for informed consumer choices."); *see also* Carlos Nunez, *US: Rise in Popularity of Fair Trade Produce*, FRESHPLAZA (Nov. 20, 2012), http://www.freshplaza.com/article/103274/US-Rise-in-popularity-of-fair-trade-produce [https://perma.cc/56E9-VVF2] (declaring that Fair Trade USA is the "largest

organization Fairtrade International[147] in 2011, while a separate entity, Fairtrade America, remained associated with Fairtrade International.[148] This split has resulted in multiple separate entities retaining confusingly similar names. To make matters more complicated, in the organizations' lists of companies bearing their respective fair trade labels, traditional corporate entities can be found right alongside PBCs and companies that have received the B Corp certification. For example, Patagonia officially organized as a PBC in 2012[149] and is listed alongside REI[150] on Fair Trade USA's list of organizations with its certification;[151] in addition, Ben & Jerry's earned B Corp certification in 2012[152] and is on Fairtrade America's

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third-party fair trade certifier in the United States" and aims to "identif[y] farmers who fairly compensate their workers," to teach "disadvantaged communities to use the free market to their advantage," and to "work with importers to ensure that farming communities where fair trade produce is grown are fairly compensated for the sales their products generate").

147. *The Fairtrade System*, FAIRTRADE INT'L, https://www.fairtrade.net/about-fairtrade/fairtrade-system.html [https://perma.cc/ST8V-NCZ9] (last visited Jan. 28, 2018) ("Fairtrade International is a non-profit, multi-stakeholder association of 23 member organizations—three producer networks and 20 national Fairtrade organizations. . . . The international Fairtrade system includes Fairtrade International, nine Fairtrade Marketing organizations, and FLOCERT (the independent certification body of the global Fairtrade system).").

148. *See Q&A on Fairtrade International and Fair Trade USA*, FAIRTRADE INT'L, https://www.fairtrade.net/about-fairtrade/fairtrade-in-the-usa/on-flo-and-fair-trade-usa.html [https://perma.cc/D3XX-GR3G] (last visited Oct. 26, 2017); *Who We Are*, FAIRTRADE AM., http://fairtradeamerica.org/What-is-Fairtrade/Who-we-are [https://perma.cc/M5QD-85DR] (last visited Jan. 28, 2018) ("Fairtrade America is an independent non-profit 501(c)(3) organization associated with the international Fairtrade system.").

149. *See* PATAGONIA WORKS, *supra* note 48 ("The B Corporation movement is one of the most important of our lifetime, which is why—when California passed the legislation—[Patagonia's founder] was the first guy in line to sign up."); *see also supra* note 39 and accompanying text.

150. RECREATIONAL EQUIPMENT, INC., BYLAWS, https://www.rei.com/content/dam/documents/pdf/REI%20Bylaws/REI%20Bylaws.pdf [https://perma.cc/9G77-8N76] ("ARTICLE I Purpose and Principles . . . Pursuant to Section 24.06.032 of Revised Code of Washington ('RCW'), Chapter 24.06 (the 'Governing Statute'), REI elects to avail itself of the additional rights and powers granted to cooperative associations under RCW 23.86.030(1), 23.86.105(1), 23.86.160 and 23.86.170."); *see also* WASH. REV. CODE ANN. §§ 23.86.030(1), 23.86.105(1), 23.86.160, 23.86.170 (West 2017). For Washington's statute regarding "Social Purpose Corporations," see WASH. REV. CODE ANN. §§ 23B.25.005–.150.

151. *Clothing*, FAIR TRADE CERTIFIED, https://www.fairtradecertified.org/search/brands?key=&brands%5B0%5D=category%3Aclothing&page=1 [https://perma.cc/83MJ-24NK] (last visited Jan. 27, 2018).

152. *Ben and Jerry's*, B LAB, https://perma.cc/WZ4T-54QV [https://perma.cc/ZP4D-KLY8] (last visited Jan. 27, 2018); *see also* Joe Van Brussel, *Ben & Jerry's Becomes B-Corp Certified, Adds Credibility to Impact Investing Movement*, HUFFINGTON POST (Oct. 25, 2012), https://www.huffingtonpost.com/2012/10/23/ben-and-jerrys-b-corp-impact-investing_n_2005315.html [https://perma.cc/WZ4T-54QV].

list with Starbucks,[153] which does not have B Corp certification.[154] The average consumer may not be aware of the distinction between a company that has met the corporate social responsibility requirements for each of the various fair trade certifications and a company that has incorporated as a PBC or received B Corp certification.

Organizations that fall somewhere between governmental and nongovernmental are standard-setting organizations (SSOs) that are "long-lived formal bodies . . . [with] delegated authority"[155] and that are "quasi-governmental, non-profit, 'umbrella organization[s] comprising hundreds of different special-purpose SSOs . . . [with] numerous committees (or subcommittees) that adopt standards in particular fields."[156] These SSOs can also take the form of "less structured, often ad hoc consortia of interested parties formed for a particular purpose."[157] One example of such a consortium is the Sustainable Rice Platform (SRP), "a multi-stakeholder platform, co-convened by United Nations Environmental Programme (UNEP) and the International Rice Research Institute to promote resource efficiency and sustainable trade flows, production and consumption operations, and supply chains in the global rice sector."[158] The SRP includes more than sixty members ranging from Syngenta and Mars Food, to the Sri Lanka Department of Agriculture and the Rice Department of Thailand, to Fairtrade International.[159] The diversity and scale of the SRP membership demonstrates the extent of the complexity that can be involved in the SSO context.

The modern reality that certifying corporate social responsibility involves many different types of entities with varying levels of accountability creates several problems. In the case of standard setting by private entities, perverse incentives can easily take hold, and even where intentions are pure, there is a deficit of public trust in such unilateral systems.[160] The hybrid nature of quasi-

153. *All Fairtrade Products*, *supra* note 141.

154. *Find a B Corp*, B LAB, https://www.bcorporation.net/community/find-a-b-corp?search=%22starbucks%22&field_industry=&field_city=&field_state=&field_country= [https://perma.cc/8FVP-SJFA] (last visited Jan. 28, 2018) (showing that the only results for the search term "Starbucks" in the database of B Corp–certified companies are five companies that mention Starbucks in their respective descriptions).

155. Teece & Sherry, *supra* note 57, at 1917.

156. *Id.*

157. *Id.*

158. *Sustainable Rice Platform*, UNITED NATIONS ENV'T, http://drustage.unep.org/resourceefficiency/what-we-do/sustainable-lifestyles/food-and-food-waste/sustainable-agri-food-supply-chains-0 [https://perma.cc/Y2AG-LTMN] (last visited Jan. 2, 2018).

159. *See Members*, SUSTAINABLE RICE PLATFORM, http://www.sustainablerice.org/Get-Involved/#members-list [https://perma.cc/Q9AE-RC9S] (last visited Nov. 14, 2017).

160. *See* Teece & Sherry, *supra* note 57, at 1918.

governmental SSOs exacerbates concerns about confusion and conflation of interests being protected.[161] The combination of all of these market actors creates a situation that is, at best, confusing for and, at worst, manipulative of consumers.[162] The PBC context may amplify these consequences and perverse incentives.[163]

2. The PBC Context

Lack of accountability in verifying compliance with standards gives rise to additional problems in the context of PBCs.[164] Not only is the value that consumers, company shareholders, and stakeholders place in PBCs rooted in the idea that they contribute a "public benefit," therefore giving rise to a heightened need for verification of this public benefit, but also current certification systems could generate greater confusion about what incorporation under the PBC form truly entails.[165] In Fair Trade USA's list of certified entities, the juxtaposition of Patagonia, which is both a PBC and a B Lab–certified B Corp, alongside other major corporations that fit neither of those classifications but that nonetheless comply with Fair Trade USA's requirements, illustrates the potential for consumer confusion about the true nature of these companies.[166]

The current array of disparate nonprofit and for-profit entities creates ambiguity and uncertainty about whether PBCs' practices live up to the greater social conscientiousness that their corporate purpose claims to espouse.[167] If the aim of PBCs under the relatively vague standard of advancing a "public benefit" is to hold much meaning, a more uniform certification system may need to replace the current ad hoc certification systems that are currently in place both for PBCs and for the broader corporate environment.[168]

B. Competition Issues with Standard Setting

Legal issues may arise in the process of establishing uniform standards or certification practices in an industry or market, particularly in the realm of antitrust. Because of the inherently

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161. *See id.*

162. *See id.* at 1919–20.

163. *See* discussion *infra* Part II.A.2.

164. *See supra* Part I.A.

165. *See supra* Part I.A.

166. *See supra* notes 149–51 and accompanying text; *see also supra* notes 139–48, 152–54 and accompanying text.

167. *See supra* Part I.A.

168. *See supra* Part I.A.

procompetitive aspects of voluntary standardization and certification behaviors, courts usually do not deem them to be per se antitrust violations when challenged under Section 1 of the Sherman Act.[169] Instead, courts tend to scrutinize them under the "rule of reason."[170] Under that analysis, a court deems a challenged behavior legitimate if its procompetitive effects outweigh its anticompetitive effects.[171] These anticompetitive effects could amount to a violation of Section 1 of the Sherman Act[172] when entities collude to conform to a certain practice, such as standards or certification thereof, that effectively constitute an agreement not to compete or, more broadly, any "restraint of trade."[173]

1. Procompetitive Effects of Standard Setting

For typical businesses, antitrust law recognizes that, in general, "legitimate standard setting is not only procompetitive but necessary for the proper functioning of modern economies."[174] Some examples of procompetitive effects of standard and certification systems include "[e]nhancement of rivalry, maintenance of consumer sovereignty, and the creation of economic efficiencies."[175] Such economic efficiencies could include the elimination of some of the market failures that occur in situations involving negative externalities stemming from information asymmetries and transaction costs, discussed above.[176] There are a few ways in which standards and certification create these procompetitive effects. Standards and certifications can diminish information asymmetry through their "principal purpose of . . . provid[ing] customers with a way of comparing product features (such as size and quality) across different sellers."[177]

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169. Sherman Antitrust Act, ch. 647, § 1, 26 Stat. 209, 209 (1890) (codified as amended at 15 U.S.C. § 1 (2012)); *see, e.g.*, Nat'l Soc'y of Prof'l Eng'rs v. United States, 435 U.S. 679, 692 (1978).

170. Gerla, *supra* note 52, at 474, 494.

171. *Id.* at 474; *see also, e.g.*, *Nat'l Soc'y of Prof'l Eng'rs*, 435 U.S. at 688.

172. 15 U.S.C. § 1 (2012) ("Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal.").

173. *Id.*

174. AM. BAR ASS'N, HANDBOOK ON THE ANTITRUST ASPECTS OF STANDARD SETTING 14 (2004).

175. Gerla, *supra* note 52, at 475–76.

176. *See supra* Part I.B.1.

177. Teece & Sherry, *supra* note 57, at 1916.

If that type of standard (referred to as a "gradation standard") is "provided for information purposes only, . . . [it] would not appear to raise competition policy concerns."[178]

2. Anticompetitive Effects of Standard Setting

Anticompetitive effects of standards that courts find objectionable may include "injury to the competitive process, diminution of rivalry, and output restrictions."[179] One "injury to the competitive process"[180] that exists in standard setting involves distortions in the establishment of those standards caused by perverse incentives on the part of the standard setters. When the government regulates a certain industry, capture can take place at various stages of the process. Not only do industries lobby governments to influence the typical legislative and regulatory processes but governments also sometimes overtly adopt the standards set by private SSOs, which can be fully accessible to the relevant industry members during the process of creating that standard and therefore far easier to influence than members of government.[181] Thus, in the context of the government, "[t]he principal antitrust concern with regulatory standards is that interested parties may be able to co-opt the regulatory process to protect their market position against potential competitors"[182] through a potentially disproportionate influence on the legislative and regulatory process because of access to SSOs and to large lobbying resources.

One infamous example of firms influencing government regulation through SSOs is the case of *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, in which industry manufacturers actively recruited new members to a private SSO in order to prevent the organization

178. *Id.* These authors further observe that even though there are ways that

> standards-setting activities can potentially raise antitrust concerns . . . the legal basis for intervention[] has rarely been articulated clearly. . . . Is the concern one of a conspiratorial agreement under section 1 of the Sherman Act, or monopolization or attempted monopolization under section 2 of the Sherman Act? If so, presumably the challenger must establish the other elements of any such claims.

Id. at 1982–83 & n.219.

179. Gerla, *supra* note 52, at 475.

180. *Id.*

181. Teece & Sherry, *supra* note 57, at 1918 ("For example, many local building codes routinely adopt (as regulations) standards promulgated by otherwise-private SSOs such as the National Fire Protection Association (NFPA). The rationale for such delegation is that the SSO has specialized expertise in the area . . . that local government bodies are likely to lack. But by manipulating the actions of those SSOs, private parties can achieve an effect that would otherwise require lobbying thousands of different city councils." (footnote omitted)).

182. *Id.*

from approving of the safety of a competing product (a behavior referred to as "stuffing the ballot box").[183] All the while, the manufacturers knew that "a substantial number of state and local governments" relied on the SSO to import verbatim standards into public laws and regulations.[184] The industry thereby quelled rising competition through an accessible private SSO and was sued for antitrust liability.[185] The *Allied Tube* defendants unsuccessfully argued that such standard-setting behavior enjoyed immunity because when governmental regulations enshrine the anticompetitive desires of a certain industry, immunity rules provide the government with protection from antitrust lawsuits.[186] However, governments are procedurally bound to only enact rules through processes requiring minimum levels of transparency.[187]

When it comes to private SSOs, perverse incentives can easily manifest themselves in the certification process, invoking the image of the proverbial fox guarding the chicken coop.[188] This moral hazard manifests when individual firms unilaterally create certifications and "green" labels for themselves or declare themselves to be producers of

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183. Allied Tube & Conduit Corp. v. Indian Head, Inc., 486 U.S. 492, 496–97 (1988); *see* Teece & Sherry, *supra* note 57, at 1918.

184. *Allied Tube*, 486 U.S. at 495, 498.

185. *See id.* at 492.

186. *See id.* at 495, 509–10 ("Petitioner contends that its efforts to affect the product standard-setting process of a private association are immune from antitrust liability under the *Noerr* doctrine primarily because the association's standards are widely adopted into law by state and local governments. . . . Although we do not here set forth the rules of antitrust liability governing the private standard-setting process, we hold that at least where, as here, an economically interested party exercises decisionmaking authority in formulating a product standard for a private association that comprises market participants, that party enjoys no *Noerr* immunity from any antitrust liability flowing from the effect the standard has of its own force in the marketplace. This conclusion does not deprive state and local governments of input and information from interested individuals or organizations or leave petitioner with ample means to petition those governments.").

187. *See* Teece & Sherry, *supra* note 57, at 1919; *see also, e.g.*, U.S. CONST. art. I, § 7, cls. 2–3 (establishing the US Constitution's bicameralism and presentment requirements for the passage of federal legislation); Administrative Procedure Act, Pub. L. No. 89-554, §§ 551–59, 80 Stat. 378, 381–88 (1966) (codified as amended at 5 U.S.C. §§ 551–59 (2012)) (establishing requirements governing the creation and enforcement of regulations, such as public notice and comment procedures).

188. *See* Rebecca Haw Allensworth, *Foxes at the Henhouse: Occupational Licensing Boards Up Close*, 105 CALIF. L. REV. 1567, 1570 (2017) (studying the manifestation of such perverse incentives in the context of occupational licensing through a "fifty-state, in-depth survey" of 1,790 state occupational licensing boards, the results of which "may be disturbing to those under the impression that occupational regulation is governmental, which is to say that it is in any measure public or public-regarding" and finding that "[t]he dirty secret behind occupational licensing boards is that very little of what they do resembles governmental activity. . . . Thin or nonexistent supervision from the states means that the licensed sector of the American workforce is almost entirely self-regulating.").

"green" bioplastic.[189] It also arises when firms exert their market power to create or maintain certain standards or certification systems. For instance, "[a] firm with experience in solving a problem in a particular way will, not surprisingly, favor standards that adopt that familiar approach, as that will give that firm a comparative advantage over other firms that have more experience in alternative solutions."[190]

3. The Argument to Regulate a Uniform Blockchain Certification System Sparingly

a. The General Corporate Context

Commentators advise that "to capture the social and economic benefits made available through standards, antitrust authorities must regulate sparingly."[191] There are also reasons for this restraint in regulating a universal, blockchain-based certification system for determining compliance with standards. There are significant procompetitive effects of the underlying standards that blockchain could certify, as discussed above, and the effectiveness of those standards could diminish if they are not effectively verified.[192] In addition, strict enforcement of such a certification system may quell innovation to improve said underlying standards as well as the decentralized-ledger-based certification systems.[193] The FTC stated that justifying anticompetitive collaborative behavior by pointing out its environmental advantages would not be a "viable defense" for anticompetitive behavior.[194] However, courts continue to discuss the

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189. *See supra* notes 88–90 and accompanying text.

190. Teece & Sherry, *supra* note 57, at 1935.

191. *Id.* at 1913.

192. *See* discussion *supra* Part II.B.1; *see also* Sean P. Gates, *Standards, Innovation, and Antitrust: Integrating Innovation Concerns into the Analysis of Collaborative Standard Setting*, 47 EMORY L.J. 583, 598 (1998) ("Among the procompetitive effects of standards, informational standards often lower consumer transactional costs by quickly conveying design or other information. By permitting ready comparison, informational standards may increase price competition.").

193. *See* Teece & Sherry, *supra* note 57, at 1919; *see also* Gates, *supra* note 192, at 592 (describing "the 'chilling effect' that the threat of antitrust litigation has on purportedly procompetitive cooperative efforts").

194. United States, *Roundtable on Horizontal Agreements in the Environmental Context*, ¶¶ 2, 12, 22 DAF/COMP/WD(2010)96 (Oct. 21, 2010), https://www.ftc.gov/sites/default/files/attachments/us-submissions-oecd-and-other-international-competition-fora/1010horizontalagreements.pdf [https://perma.cc/8WRQ-WRQE] ("Arguing that particular conduct benefits the environment is not a viable defense to conduct that is otherwise illegal under antitrust laws. . . . It is highly unlikely that competitors could defend successfully a Section 1 claim on the ground that their anticompetitive agreement has environmental benefits. . . . The task of balancing the public policy goals of competitive markets and

potential role for noneconomic considerations—like public health and safety—and broader societal welfare in a rule of reason analysis.[195]

b. The PBC Context

Antitrust enforcement of a uniform, blockchain-based certification system should especially be lenient in the context of PBCs. Indeed, antitrust jurisprudence has already begun to allow for a consideration of general social welfare when courts balance the procompetitive and anticompetitive effects of agreements made by entities that do not belong to the traditional corporate context when they are challenged under Section 1 of the Sherman Act.[196] In *United States v. Brown University*, the US Court of Appeals for the Third Circuit reversed the district court's determination, made under a "quick look" rule of reason analysis, that Ivy League schools and other schools violated the Sherman Act by agreeing to make collective determinations concerning financial aid awards.[197] Pointing to *Goldfarb v. Virginia State Bar*, in which the Supreme Court "counseled against applying traditional antitrust rules outside of conventional business contexts,"[198] the Third Circuit agreed with the district court that the agreement was not per se unlawful because "as a qualified charitable organization[,] . . . MIT deviates even further from the profit-maximizing prototype than do professional associations."[199] The court determined that "the district court erred by failing to adequately consider the procompetitive and social welfare justifications proffered by MIT."[200] In holding that the case required a full rule of reason analysis on remand, the court outlined criteria for that analysis that included the social benefits of the agreement as procompetitive effects with weight in the rule of reason balance.[201] The court described the promotion of "socioeconomic diversity" as an improvement of the quality of the product or service;[202] the increased

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preservation of the environment belongs to legislators, not courts or antitrust enforcers. Thus, horizontal agreements relating to environmental objectives are treated the same as other horizontal agreements for purposes of antitrust analysis.").

195. Gerla, *supra* note 52, at 476–78 (collecting cases); *see also* discussion *infra* Part II.B.3.b.

196. 15 U.S.C. § 1 (2012); *see* United States v. Brown Univ., 5 F.3d 658, 661 (3d Cir. 1993).

197. *Brown Univ.*, 5 F.3d at 661, 664.

198. *Id.* at 670 (citing Goldfarb v. Va. State Bar, 421 U.S. 773 (1975)).

199. *Id.* at 672. This observation could have important implications for potential future antitrust claims against PBCs.

200. *Id.* at 661.

201. *Id.* at 674.

202. *Id.* (citing NCAA v. Bd. of Regents of the Univ. of Okla., 468 U.S. 85, 114 (1984)).

financial aid for "needy students" as "[e]nhancement of consumer choice";[203] and financial aid, generally, as "eliminating price competition [and] . . . channel[ing] competition into areas such as curriculum, campus activities, and student-faculty interaction."[204]

When it comes to standard setting, the problems that arise from overregulation and the benefits that would result from lenient enforcement would be amplified in the context of PBCs. If adopted by other courts, the *Brown University* approach could help to establish a lenient precedent to antitrust enforcement of collective action by PBCs to create and subscribe to a uniform, blockchain-based certification system.[205] If such standard-setting behavior was perceived as collusive to an extent that would give rise to Sherman Act concerns,[206] courts might similarly consider PBCs uniformly using a blockchain certification system to have an organizational purpose outside of the normal realm of the business world.[207] In fact, the context of PBCs provides even more compelling reasons for courts to do so than the context of nonprofit entities such as universities. PBCs still have a for-profit purpose, which is the area in which antitrust enforcement is the most important, as one of the primary purposes of the Sherman Act was to prevent businesses from colluding to fix prices.[208] The PBC corporate form has the potential to attract more shareholder and consumer dollars than a traditional corporate entity because it espouses a mission that is socially and environmentally responsible.[209] Because profit-generation incentives remain, the anticompetitive effects of allowing for different, ad hoc certification systems across the PBC corporate landscape would likely outweigh the potential procompetitive effects of strictly regulating a uniform certification system with the aim of preventing firm collusion.

Uniform certification for corporations and PBCs pursuing a public benefit provides significant procompetitive effects that may also outweigh any anticompetitive effects with the social and environmental welfare that they would create.[210] Even when companies engage in good faith efforts to truthfully advertise that they endeavor to engage in sustainable business practices, the

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203. *Id.* at 674–75 (citing *NCAA*, 468 U.S. at 102).

204. *Id.* at 675.

205. *See id.* at 658.

206. *See* Allied Tube & Conduit Corp. v. Indian Head, Inc., 486 U.S. 492, 492–93 (1988); *see also supra* Part II.B.2.

207. *See Brown Univ.*, 5 F.3d at 670 (citing Goldfarb v. Va. State Bar, 421 U.S. 773, 778 (1975)).

208. *See, e.g.*, United States v. Socony-Vacuum Oil Co., 310 U.S. 150, 223–24 (1940).

209. *See* discussion *supra* Part I.A.

210. *See* discussion *supra* Part II.B.

underlying information about supply chains and production methods still requires the effective calculation and corroboration that reliably certified compliance to standards provides. Standards and certifications are valuable enough that they should withstand antitrust scrutiny, especially in the PBC context, and blockchain technology could provide transparency to such certification, which could significantly mitigate the potential anticompetitive effects of collusion-like agreement within industries to subscribe to certain certifications and standards.

III. SOLUTION

Blockchain could become an important tool in creating or streamlining standardized certification for modern, socially responsible businesses. Implementing blockchain technology in the certification process would provide both the comprehensiveness of information and the flexibility to approach standards in an "inclusive" way.[211] Blockchain could allow for low-cost, ex post adjustments to standards, where needed, while preserving all the information necessary to later enforce those standards.[212] Using blockchain in the process of certification could mitigate the costs associated with adjusting methods of measuring compliance to changing production standards.[213] Blockchain would provide a thorough account of the entire lifespan of a product as it moves through a supply chain and would thereby serve as the backbone for measuring compliance to any standard—new or old—with which the producer may wish or be obliged to comply.[214] If the standard or certification system used by groups, corporations, or PBCs faces a challenge under the Sherman Act, the comprehensive information provided by blockchain technology would contribute to antitrust enforcement by providing meaningful information to a court's rule of reason analysis. This information would be particularly helpful in the context of PBCs, which might be scrutinized under the same analysis as the Ivy League schools in *Brown University*.[215]

Some businesses have already floated the idea of using blockchain technology to track products along their supply chains[216] as

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211. *See supra* note 57 and accompanying text.

212. *See supra* notes 58–59 and accompanying text.

213. *See supra* notes 55–59 and accompanying text.

214. *See supra* Part I.C.

215. *See* United States v. Brown Univ., 5 F.3d 658, 668 (3d Cir. 1993).

216. Roger Aitken, *IBM Forges Blockchain Collaboration with Nestlé & Walmart in Global Food Safety*, FORBES (Aug. 22, 2017, 9:15 AM), https://www.forbes.com/sites/rogeraitken/2017/08/22/ibm-forges-blockchain-collaboration-with-nestle-walmart-for-global-food-

a method of addressing the problems of data availability and reliability that occur in any scenario involving product ratings and reviews, such as in the case of GoodGuide described above. For example, a company called Provenance incorporates blockchain into its methodology to increase reliability in reviewing products.[217] Provenance tracks product supply chains to monitor any given type of concern that might arise in goods production,[218] such as to track slavery in the fish market.[219] The company completed a successful trial of this system,[220] by which local companies in source areas for the

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safety/#1467d4c73d36 [https://perma.cc/CS75-ZQKW] ("A group of leading retailers and food companies including Nestlé and Walmart have signalled their commitment to 'strengthen consumer confidence' in the foods they purchase by announcing a major blockchain collaboration with IBM. . . . Given that today nobody currently oversees the entire supply chain and traceability is undertaken only in a linear fashion, this is where the blockchain is being pitched as playing a pivotal role."); Michael J. Casey & Pindar Wong, *Global Supply Chains Are About to Get Better, Thanks to Blockchain*, HARV. BUS. REV. (Mar. 13, 2017), https://hbr.org/2017/03/global-supply-chains-are-about-to-get-better-thanks-to-blockchain [https://perma.cc/5HDJ-B9C3] ("In a nutshell, this is a global system for mediating trust and selective transparency.").

217. PROVENANCE, https://www.provenance.org/ [https://perma.cc/JAX3-4Z38] (last visited Jan. 2, 2018); *see* PROVENANCE, BLOCKCHAIN: THE SOLUTION FOR TRANSPARENCY IN PRODUCT SUPPLY CHAINS (2015) [hereinafter PROVENANCE WHITEPAPER], https://www.provenance.org/whitepaper [https://perma.cc/NL2M-ADWN] ("Using blockchains as a shared and secure platform . . . overcome[s] the weaknesses of current systems by allowing one to securely audit all transactions that brought this state of being into effect; i.e., to inspect the *uninterrupted* chain of custody from the raw materials to the end sale. The blockchain also gives us an unprecedented level of certainty over the fidelity of the information. We can be sure that all transfers of ownership were explicitly authorized by their relevant controllers without having to trust the behavior or competence of an incumbent processor. Interested parties may also audit the production and manufacturing avatars and verify that their 'on-chain' persona accurately reflects reality." (emphasis in original)); *see also* The Provenance Team, *How Provenance Uses Blockchain to Digitise Certification*, PROVENANCE (July 25, 2017), https://www.provenance.org/news/technology/blockchain-certification [https://perma.cc/Y2AX-B7V6].

218. PROVENANCE WHITEPAPER, *supra* note 217 ("[Provenance] uses blockchain technology to enable secure traceability of certifications and other salient information in supply chains. Provenance enables every physical product to come with a digital 'passport' that proves authenticity . . . and origin . . . , creating an auditable record of the journey behind all physical products."); *see also* Luke Parker, *Provenance to Restore Consumer Trust with the Blockchain*, BRAVE NEW COIN (Dec. 5, 2015) [hereinafter Parker, *Restore Consumer Trust*], http://bravenewcoin.com/news/provenance-to-restore-consumer-trust-with-the-blockchain/ [https://perma.cc/RT4Q-XK87].

219. *See* Luke Parker, *Provenance Tackles Slavery in the Fish Trade, with Blockchain Technology*, BRAVE NEW COIN (Sept. 16, 2016) [hereinafter Parker, *Slavery in the Fish Trade*], http://bravenewcoin.com/news/provenance-tackles-slavery-in-the-fish-trade-with-blockchain-technology/ [https://perma.cc/7FDH-YU6Q]; *see also* Tom Levitt, *Blockchain Technology Trialled to Tackle Slavery in the Fishing Industry*, GUARDIAN (Sept. 7, 2016, 2:30 AM), https://www.theguardian.com/sustainable-business/2016/sep/07/blockchain-fish-slavery-free-seafood-sustainable-technology [https://perma.cc/F94Y-KKWQ].

220. PROVENANCE, FROM SHORE TO PLATE: TRACKING TUNA ON THE BLOCKCHAIN (2016), https://www.provenance.org/tracking-tuna-on-the-blockchain [https://perma.cc/LHA2-9HTN].

fish trade would add their day's catch to a public blockchain via text message.[221] "The catch, processing, accreditation, packaging, shipping, and shelving of every filet's history can then be recorded online for the world to scrutinize."[222] The system works partially because, according to a United Nations Environmental Program (UNEP) report, "[m]ost sustainability issues[,] such as ill-adapted governance and institutions, . . . bad working conditions, lack of price transparency and information sharing[,] . . . are concentrated at the level of production and first intermediaries/processors."[223] Provenance already works with a number of companies, including the British supermarket Co-op[224] and a number of certifiers, including Fairtrade International.[225] A new collaboration "to test whether blockchain technology can help unlock financial incentives that improve transparency and sustainability in supply chains" involves other fintech startups, large companies like Unilever and Sainsbury's, and global banks like Barclays and BNP Parisbas.[226] Previous implementations of blockchain technology only involved specialized services, such as Everledger, which tracks the production of diamonds,[227] and Ascribe, which tracks digital artwork.[228] In contrast,

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221. Parker, *Slavery in the Fish Trade*, *supra* note 219.

222. *Id.*

223. UNITED NATIONS ENV'T PROGRAMME, THE ROLE OF SUPPLY CHAINS IN ADDRESSING THE GLOBAL SEAFOOD CRISIS 7 (2009), http://unep.ch/etb/publications/Fish%20Supply%20Chains/UNEP%20fish%20supply%20chains%20report.pdf [https://perma.cc/8TBE-J5TG].

224. The Provenance Team, *Unlocking the Financial Incentives That Reward Sustainability in Supply Chains*, PROVENANCE (Dec. 12, 2017), https://www.provenance.org/news/us/3899 [https://perma.cc/7BG8-4CXK]; *see also* Cathryn Higgs, *Provenance Alpha*, CO-OP (Sept. 15, 2016), https://digitalblog.coop.co.uk/2016/09/15/provenance-alpha/ [https://perma.cc/4B99-RFGB].

225. Thibaut Schaeffer, *Blockchain FAQs for Certifiers, Auditors and Assurance Organisations*, PROVENANCE (Oct. 10, 2017), https://www.provenance.org/news/technology/blockchain-faqs-certifiers-auditors-assurance-organisations [https://perma.cc/6T56-JCQX].

226. The Provenance Team, *supra* note 224; *see also* Thomas Verhagen, *Blue Chips and Startups Launch New Fintech Pilot for More Sustainable Supply Chains at the One Planet Summit*, CAMBRIDGE INST. FOR SUSTAINABILITY LEADERSHIP (Dec. 12, 2017), https://www.cisl.cam.ac.uk/business-action/sustainable-finance/banking-environment-initiative/news/blue-chips-and-startups-launch-new-fintech-pilot [https://perma.cc/R72E-5WV7].

227. Luke Parker, *Everledger Uses the Blockchain, Tackling Conflict Diamonds and Insurance Fraud*, BRAVE NEW COIN (July 8, 2015), http://bravenewcoin.com/news/everledger-uses-the-blockchain-tackling-conflict-diamonds-and-insurance-fraud/ [https://perma.cc/GH8A-8EPV]; *see also* EVERLEDGER, https://www.everledger.io/ [https://perma.cc/XZ7S-49GR] (last visited Jan. 2, 2018); Parker, *Restore Consumer Trust*, *supra* note 218 ("[A] few specialized services like Everledger . . . use the blockchain to track single product types, in their [case] of diamonds.").

228. Luke Parker, *Ascribe Wants to Build 'The Ownership Layer of the Internet'*, BRAVE NEW COIN (June 5, 2015), http://bravenewcoin.com/news/ascribe-wants-to-build-the-ownership-

the value of Provenance lies in its versatility in tracking "any type of product, throughout every part of its lifecycle."[229]

Hurdles remain for mainstream adoption of blockchain, and they are not necessarily technological.[230] Some of the most daunting remaining challenges involve "politics, regulatory approval, and the many thousands of hours of custom software design and front and back-end programming still required to link up the new blockchain ledgers to current business networks."[231] Lawyers, businesspeople, and regulators need to address these and other issues in order to realize blockchain implementation.[232]

Despite certain obstacles, blockchain technology remains a promising tool for future certification systems and could be particularly important in the PBC context. PBC corporate doctrine requires that companies pursue some public benefit by keeping the interests of stakeholders other than shareholders in mind but does not necessarily require a third party to verify the company's adoption of socially and environmentally responsible practices.[233] Therefore, certification that PBCs meet baseline standards for social responsibility in those processes will become increasingly important, not only for ensuring corporate compliance with basic government regulations or a third-party certification system but also for determining that PBCs deliver the public benefit promised in their articles of incorporation.

While uniform behavior across an industry or market may raise antitrust concerns, it also has the potential to vitally contribute to healthy competition. PBCs' ability to set ad hoc sustainability standards for themselves may be more harmful and involve even greater anticompetitive aspects than for typical corporations. This is because the market for PBCs, both in investor shares and consumer

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layer-of-the-internet/ [https://perma.cc/RY52-YKYK]; *see also* ASCRIBE, https://www.ascribe.io/ [https://perma.cc/YLG5-NBSM] (last visited Jan. 2, 2018); Parker, *Restore Consumer Trust*, *supra* note 218 ("[A] few specialized services like . . . Ascribe use the blockchain to track single product types, in their [case] of . . . digital artwork.").

229. Parker, *Restore Consumer Trust*, *supra* note 218.

230. *See* Garret/Galland Research, *Can Blockchain Become the Gold Standard?*, INVESTOPEDIA (Nov. 10, 2016, 3:49 AM), http://www.investopedia.com/stock-analysis/111016/can-blockchain-become-global-standard.aspx [https://perma.cc/NW2H-CM59].

231. *Id.*

232. For blockchain to become mainstream, according to Garret/Galland Research, additional changes must take place: "DLT [distributed ledger technology] must interface with other parts of the operational processes seamlessly. . . . Security also remains a concern. . . . Banks are not interested in an open-source model for identity. . . . Regulation is also critical in creating an open digital environment for commerce and financial transactions." *Id.*

233. *See supra* notes 36–37, 44–47 and accompanying text.

demand for products, could be driven by PBCs' ability to meet those exact standards.[234]

IV. CONCLUSION

Fostering a competitive market for sustainable products and services from both traditional corporations and PBCs will require developing certification systems that involve the transparency, verifiability, accountability, and accessibility that can be supplied through blockchains. This market may become quite significant. The popularity of PBCs is rising, and even companies that continue to incorporate in the traditional profit-maximizing manner are facing pressure from consumers to engage in a more prosocial, proenvironmental manner along their supply chains. High-profile cases such as the VW scandal are likely further incentivizing traditional corporations to find ways to verify the sustainability of their business practices. This pressure may also bring PBCs even more into the mainstream.

In this business environment, transparent tracking of production processes in order to reliably evaluate a company's compliance with environmental and social responsibility standards plays an increasingly crucial role. Widespread adoption of blockchain-based certification systems would provide such transparency and reliability, thereby mitigating the market failures that arise in the modern, high-transaction-cost business environment. A regulatory crackdown on such a system would be counterproductive in mitigating the market failures that antitrust doctrine itself aims to combat.

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234. *See, e.g.*, *Why Do Investors Like Benefit Corporations?*, BENEFIT CORP., http://benefitcorp.net/investors/who-investing-benefit-corps [https://perma.cc/8K92-5G9V] (last visited Jan. 2, 2018).

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