CONSIDERING ALTERNATE AND COMPREHENSIVE APPROACHES TO PROPOSED RIGHT TO REPAIR LAWS IN U.S. AGRICULTURE

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ABSTRACT:

Farming in the United States as an occupation and as an industry is in crisis. Startup and entry costs are already problematically high; required dealership visits or house calls due to a lack of access to parts or information for repairing agricultural equipment can make farming even more prohibitively expensive. Critical efforts by the Biden Administration through a July 9, 2021 executive order have helped to provide additional consumer protections, alongside progress made through state laws. Separate negotiations with companies like John Deere in January 2023 have likewise demonstrated a possible avenue for right to repair, but a more permanent solution is needed that makes use of several facets of lawmaking and policy. This paper will consider arguments for approaches to right to repair: federal-level laws, state-level laws, actions from the executive and judicial branches, and other options like comparative law, grassroots efforts, and shareholder initiatives. Federal or state legislation alone may not be the best tool available for addressing the core problem of right to repair; a more comprehensive approach is needed.

I. INTRODUCTION

Agriculture is a crucial American industry. In 2019, American farm products added $136.1 billion to the U.S. economy.[1] Farming careers within that lucrative economic sector can be attractive for any number of reasons. Many Americans may seek a different lifestyle away from urban areas; others come from a long-standing family or community tradition of farming. A romanticized notion of what all goes into farming has entered the common conscience, as evidenced by farming/life simulator video games like *Harvest Moon* and *Stardew Valley* becoming quite popular. *Stardew Valley*, for example, surpassed 15 million copies sold as of September 2021.[2]

The reality of small-scale farming, however, is quite costly: according to a 2017 estimate, starting an average dairy, wheat, or grain farm in the Midwest U.S. could range from $2.5 to $5.2 million.[3] Along with startup costs are repairs to expensive farming machinery that can often be done only by a qualified dealership, similar to that of high-end passenger cars.[4] Some factors, however, tend to differentiate farming from the automotive industry; whereas a car buyer can purchase a vehicle with fewer anticipated maintenance costs – buying a pre-owned Honda or Toyota instead of a Porsche or a Lamborghini - there are only a few manufacturers for farm

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[1] *Ag and Food Sectors and the Economy,* ECON. RSCH. SERV, U.S.D.A., https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/ag-and-food-sectors-and-the-economy/ (last visited Dec. 13, 2023).

[2] Mollie Taylor, *Stardew Valley Has Sold Over 15 Million Copies as Creator Shifts to New Project*, (Sept. 8, 2021), PCGAMER.COM, https://www.pcgamer.com/stardew-valley-has-sold-over-15-million-copies-as-creator-shifts-to-new-project/.

[3] Shawn Williamson, *How Much Money Does It Take to Become a Farmer?* SUCCESSFUL FARMING (June 27, 2017) https://www.agriculture.com/farm-management/business-planning/how-much-does-it-take-to-become-a-farmer. *See also* Shawn Williamson, *What's the Cost of Grain Farming in Iowa vs. Nebraska Dairy or Kansas Wheat?* SUCCESSFUL FARMING (August 17, 2017), https://www.agriculture.com/farm-management/business-planning/whats-the-cost-of-grain-farming-in-ia-vs-neb-dairy-and-ks-wheat?utm_source=ag-newsletter&utm_medium=email&utm_campaign=todaysnews_081817&did=165347.

[4] Caleb Jacobs, *Farmers are Buying Up Old Tractors Because New Ones are Pointlessly Complicated and Expensive,* THEDRIVE.COM (January 9, 2020), https://www.thedrive.com/news/31761/enormous-costs-of-new-tractors-drive-demand-of-40-year-old-equipment-to-all-time-highs.

equipment like tractors. The result is increased pressure on the used equipment market, causing even basic machines from earlier eras to be higher in price than needed.[5] Farmers have a limited ability to repair newer models because of manufacturers including software firewalls, proprietary tools, and constraints on spare parts.[6] Firmware limitations are especially problematic, as they can lead farmers to pursue unsafe workarounds or risk losing their ability to conduct business.[7] The consequences of these expenses make farming a more difficult profession and could make small farming operations untenable in the future.

The right to repair seeks to address some of these concerns by providing a legal mechanism for farmers to either repair their equipment on their own or to use an independent repair facility. The advocacy for right to repair within agriculture is part of a much broader movement that encompasses electronics, automobiles, and appliances, as well as many other products. It stems from two major philosophical ideas: consumer protection and environmental sustainability, both of which will be reviewed in this article. While the reasoning behind right to repair has been discussed in other works before, it is crucial to establish connections between these two concepts and the potential solutions.

Though the more general topic of right to repair has been discussed by various stakeholders – for example, authors, journalists, legal scholars, and Congressional hearings[8] - less has been written about how this will affect farming and agriculture specifically. Some legal scholars have focused on firmware for farming machinery or the argument for federal legislation as a comprehensive solution.[9] Others demonstrate the level of support that copyright law can provide.[10] Numerous updates and developments, discussed herein, have taken place from 2020 to 2023 that demonstrate a need to look at the progress of earlier efforts to codify right to repair laws as well as the scholarship that has been done to this point. This paper also seeks to take a broader approach and examine the underpinnings of right to repair in terms of economics and policy. This analysis supports the idea of right to repair as a combined effort of federal, state, and nonprofit organizations.

II. RIGHT TO REPAIR AND AGRICULTURAL ECONOMICS

Changes are taking place within the economics of farming that make appropriate action on right to repair even more important. The economic forecast for farming as an industry is mixed. Cash receipts for crops are high, but production costs are also increasing, and the buoying effect of direct government payments as part of COVID-19 relief has fallen over time: government payments fell nearly 39% from 2020 to the final forecast for 2021.[11] There are other issues within

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[5] *Id.*

[6] *Id.*

[7] *See* Kristian G. Suarez, Note, *Vehicle Manufacturer Practices in the Digital Era: What Can the Law Do When Unfair Practices Threaten Farmers*, 94 N.D. L.REV. 512 (2019).

[8] *Right to Repair: Industry Decision and Legislative Options: Hearing Before the Subcomm. on Com., Trade, and Consumer Prot.*, 109 Cong. 1 (2005).

[9] *See* Suarez, *supra* note 7.

[10] *See* Kaitlin Dudding, *How Federal Copyright Law Supports Those Advocating for the Right to Repair*, 26 DRAKE J. AGRIC. L. 101 (2021).

[11] *Farm Sector Income & Finances: Farm Sector Income Forecast*, ECON. RSCH. SERV., U.S.D.A. (Sept. 2, 2021),

the agricultural industry that could affect profitability, like the acquisition of smaller farming operations by much larger ones.

Farms have been consolidating in size over the past few decades, which leads to both positive and negative consequences.[12] One positive result is that larger firms can achieve greater economies of scale with lower input costs. Having fewer farms could result in reduced innovation – there is less incentive for larger operations to try new processes if the inputs are uniform.[13] Farming is still made up of both small and large entities by number: 90% of farms as business organizations are considered small, with adjusted gross cash farm income (GCFI) less than $350,000 per year, but those farms produce only about 22% of farm products.[14] Smaller farms have narrower profit margins to work with, so if a major repair is needed it can have a major impact on their viability.

Another major area of consolidation is in the seeds used to grow crops. As of 2021, about 60% of seeds were sold by just four companies, resulting in some of the same issues as farm size.[15] This means that farmers must buy new seeds that are resistant to herbicides alongside the herbicides that the seeds can tolerate, leading to a continual cycle of purchasing more chemical products to maintain their crops – something that is more easily accomplished by larger firms.[16] While not directly related to right to repair, the supply constraint for purchasing seeds from only a select number of companies causes costs to increase, affecting the farmer's bottom line even more. The constraint can also naturally result in more stress on the environment. Complicating the situation and increasing the need for effective right to repair changes are rising product prices (a negative consequence for consumers) and lower yields due to environmental degradation.[17] This situation presents an opportunity for innovation and a multi-faceted approach; some of the same structural issues that cause problems for seed purchase and use causes similar complications for repairs.

https://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/farm-sector-income-forecast/.

[12] Jennifer Reibel, *Manufacturer Consolidation Reshaping the Farm Equipment Marketplace*, FARM EQUIPMENT (Aug. 29, 2018), https://www.farm-equipment.com/articles/15962-manufacturer-consolidation-reshaping-the-farm-equipment-marketplace#Market%20Share.

[13] *Id*.

[14] *Farming and Farm Income*, ECON. RSCH. SERV., U.S.D.A., https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/farming-and-farm-income/ (last visited Dec. 13, 2023).

[15] Shelby Aronov, *"Big Seed" is Failing, and Farmers Need a Plan B*, FORBES (Sept. 30, 2021, 9:15AM), https://www.forbes.com/sites/forbestechcouncil/2021/09/30/big-seed-is-failing-and-farmers-need-a-plan-b/?sh=558957546f75.

[16] *Id*.

[17] *Id*.

III. THE PHILOSOPHY

Right to repair is closely connected to two philosophies: consumer protection and sustainability. Each will be considered in turn.

A. RIGHT TO REPAIR AND CONSUMER PROTECTION

Right to repair as a consumer protection concept affects many different areas of life, from cell phones to the ice cream machine at McDonald's.[18] More specifically to agriculture, it can affect the purchase of tractors and other major complex equipment. A tractor may seem like a relatively straightforward machine, but modern ones are quite complicated. Modern tractors have an engine control unit (ECU) that serves to make sure that the engine is running appropriately. Addressing the ECU can often require expensive diagnostic equipment that can even be model-specific.[19] Something as small as a sensor could cause the entire vehicle to shut down for multiple days, causing farmers to lose financial opportunities.[20]

Philosophically, consumer protection laws are firmly rooted in competition law and in the prevention of unfair practices.[21] The Federal Trade Commission as an administrative agency of the federal government plays an essential part in making sure that competition is healthy and beneficial to the consumer.[22] While the early ownership of equipment may be covered by an express or implied warranty, the right to repair provides for additional use of that product which makes its initial purchase price more feasible and economical. In the area of agriculture, the theory behind the right to repair does not offend the intellectual property or patents of the original manufacturer, nor does it seek to recombine or reconstruct equipment into a copy or facsimile of the product. The Supreme Court since its early history has asserted that equipment should be durable so that new parts preserve its use and identity.[23]

The economy, though, changes over time. The philosophy of consumer protection must also adapt to the increasing use of the subscription and license models in the sale of products. With licenses, a customer does not purchase the good outright, but instead is provided access to it for a period of time. Leases based on some characteristic, like hours used, could leave the responsibility for repair with the manufacturer and dealer instead of demanding that the consumer attempt repairs themselves or seek out an independent repair shop. If farming equipment reaches a key point of complexity and expense such that it does not make economic sense for full ownership to take place,

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[18] Julie Jargon, *Why Is the McFlurry Machine Down Again?* WALL ST. J. (Jan. 19, 2017, 11:41AM), https://www.wsj.com/articles/six-horrifying-words-the-mcflurry-machine-is-down-again-1484840520.

[19] Kyle Wiens, *New High-Tech Farm Equipment is a Nightmare for Farmers*, WIRED.COM (Feb. 5, 2015, 7:00AM), https://www.wired.com/2015/02/new-high-tech-farm-equipment-nightmare-farmers/.

[20] *Id*.

[21] Timothy J. Muris, *The Federal Trade Commission and the Future Development of U.S. Consumer Protection Policy* (Law and Econ. Working Paper Series, Geo. Mason Univ. Sch. of Law, April 2019).

[22] *Id*.

[23] *See* William H. Lesser, *Bowman v. Monsanto and Self-Replicating Seeds; David v. Goliath or Don Quixote v. Windmills*, 13 J. HIGH TECH. L. 508, 534-35 (2013).

such as the Rolls-Royce model of sales for aircraft engines, the question as to whether right to repair should be firmly and concretely put into law may become less relevant.[24] Some high-end automobile manufacturers - a common comparison point for equipment like tractors - have already put this into effect, so the potential for the spread of this economic concept is visible.[25] The complications of the COVID-19 pandemic have also led to a significant increase in the use of subscription services, lending further support to its permanency in the new economy.[26]

These developments lead naturally to the consideration of antitrust law. Substantial regulation has already been attempted, with varying results, in illegal bundling and restrictions on competition dating back to *Continental T.V. v. GTE Sylvania*.[27] Forced buying and tie-ins exist in situations where consumer choice is diminished by being required to purchase another product when their desire is only to purchase the first one – the principle being that consumers gain nothing from the exchange while the manufacturer gains the benefit of reduced competition.[28] While historically courts have presumed tying to be illegal, recent court decisions have employed a rule of reason approach.[29] One such example is *Leegin Creative Leather Products v. PSKS,* where the U.S. Supreme Court distanced itself from the *per se* nature of its earlier interpretations of the Sherman Act.[30] This could result in a higher mountain to climb for court challenges to right to repair that rely on antitrust, as the Court's current jurisprudence tends to require a stronger showing of anticompetitive practices existing.

As applied to right to repair, one could also argue that the inability to repair one's product is illegal bundling. Consumers (in this case, farmers) are given no real option to negotiate the terms of buying the equipment and do not benefit from the need to have manufacturers repair their tools. Meanwhile, the manufacturer gains an advantage by being the only available option to make necessary repairs.

In addition to the proliferation of subscription services, a noticeable shift in the purchase of consumer products has been the interconnection between good and service. This has major

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[24] For an overview of the Rolls-Royce "Power-by-the-Hour" model, *see* David J. Smith, *Power-by-the-Hour: The Role of Technology in Reshaping Business Strategy at Rolls-Royce*, 25 TECH. ANALYSIS & STRATEGIC MGMT. 987 (2013).

[25] *See, e.g.*, VOLVO CARS, *Care by Volvo,* https://www.volvocars.com/us/care-by-volvo/ (last visited Dec. 13, 2023).

[26] *See* Dave Raley, *Sustainer Boom: The Pandemic has Accelerated the Subscription Economy, and What That Means for Nonprofits and Recurring Giving*, LINKEDIN (June 13, 2021), https://www.linkedin.com/pulse/sustainer-boom-pandemic-has-accelerated-subscription-economy-raley.

[27] 433 U.S. 36 (1977).

[28] FED. TRADE COMM'N, *Single Firm Conduct: Tying the Sale of Two Products* (2023), https://www.ftc.gov/advice-guidance/competition-guidance/guide-antitrust-laws/single-firm-conduct/tying-sale-two-products.

[29] *Id*.

[30] 551 U.S. 877 (2007).

implications for agricultural consumers, as when they are purchasing equipment, they must also keep in mind the service component: what some legal scholars have called a "continuous post-transaction relationship."[31] Doing so can lead to an even worse asymmetric relationship, given that sellers can limit consumer autonomy through bundling, especially when it comes to resale and innovation.[32]

The implications of a move to subscriptions for products on the agricultural sector and consumer protection are clear. With only three major manufacturers of tractors in the United States[33], the three are constantly seeking competitive advantage in a sector where market share is unlikely to move substantially in one direction or the other absent some major development. This environment likely constitutes a monopsony, an economic situation with which American agriculture is all too familiar.[34] A subscription service for farm equipment could be that major development. The new knowledge management advantage that is derived from the use of advanced digital technology in tractors and other equipment could be of use to one or more of these companies in increasing profits.[35] Failing to take service logistics into account could mean that resolving the current right to repair controversy with a direct federal and/or state law, as many have recommended, may not be anticipating a new trend in the market that would eventually lead to raising the same concern – resolving a power imbalance between manufacturer and consumer - in a different way.

Products as services do have some appeal and are not likely to become a fad. The idea could also additionally lead to manufacturers improving the ease of repair, since the burden will have shifted from the customer to the dealer.[36] Although in the automotive industry BMW and Audi have closed their subscription services, Volvo and Porsche are fine-tuning and expanding theirs, suggesting that subscriptions will be present in one form or another in the future.[37] The car companies that are closing these options may simply be running into the first mover disadvantage, a situation where the first adopter of a new technology accepts the risk of failure instead of those who adopt later, who are then able to make improvements.[38]

The current approaches to right to repair are incomplete as a result of failing to take into consideration how consumer uses of products have changed. Consumer protection is not a stationary force; it has to adjust to meet the needs of developing technology. The consequence of the subscription movement may be that the laws that are being deliberated as of now, when connected to the executive order and FTC guidance, are not planning ahead sufficiently.

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[31] Chris J. Hoofnagle, Aniket Kesari, & Aaron Perzanowski, *The Tethered Economy*, 87 GEO. WASH. L. REV. 783, 783 (2019).

[32] *Id*. at 829, 834.

[33] Reibel, *supra* note 12.

[34] *See, e.g.,* ROGER D. BLAIR & JEFFREY L. HARRISON, MONOPSONY IN LAW AND ECONOMICS (2012).

[35] Smith, *supra* note 24.

[36] *Id*. at 832.

[37] Roberto Baldwin, *While Most Car Subscriptions Struggle, Volvo and Porsche Expand*. CARANDDRIVER.COM (Jan. 30,2021), https://www.caranddriver.com/news/a35231933/car-subscription-services-volvo-porsche/.

[38] *See* Gideon Parchomovsky & Endre Stavang, *The Green Option*, 99 MINN. L. REV. (2015) (explanation of first mover disadvantage).

B. RIGHT TO REPAIR AND THE ENVIRONMENT

Consumer protection has a companion justification for right to repair laws: environmental sustainability. One reason why the subscription service economy discussed above is appealing is that by focusing on the function aspect rather than the sale aspect, manufacturers and consumers can increase the effectiveness of resource allocation and lessen environmental impact.[39] The French approach to right to repair, discussed herein, asserts preventing obsolescence and preserving natural resources as two of its objectives through the creation of its Sustainability Index.[40] Right to repair emphasizes extending the usable life of a product, meaning that less waste is generated; it also encourages manufacturers to design and sell products that are durable enough to be repaired rather than replaced. The construction of electronic devices, often the centerpiece of the right to repair movement, causes a lot of raw materials to be used up. While this component of the argument for right to repair still merits significant exploration, recent research has formed a foundation for doing so.[41] The combination of products that break down more easily, goods that can be rendered unusable through software updates, and a lack of information lead to economic decisions that are at odds with sustainability.[42]

C. RIGHT TO REPAIR AND THE INFORMED CONSUMER

A successful right to repair movement needs consumers who are informed.[43] Research into consumer preferences has shown that consumers have an expectation of the ability to repair some products themselves or to choose an independent repair shop.[44] Likewise, consumers would likely make meaningful and material changes to their purchase behavior if they were aware that their repair options were limited.[45] In the FTC's 2021 report to Congress on repair restrictions, the agency noted that educating consumers about the right to repair was a priority.[46] The FTC has used

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[39] Olle Karlsson & Jan Kellgren, *"The Bottom Calling the Top" – The Selling of Function (PSS) as a Business Model for Sustainability in Need of Some Assistance from the Legislator*, 23 FLA. TAX REV. 825, 831 (2020).

[40] MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE, *Indice de Réparabilité* (July 2, 2021), https://www.ecologie.gouv.fr/indice-reparabilite.

[41] For an overview of those concerns, *see* Joshua Turiel, Note: *Consumer Electronic Right to Repair Laws: Focusing on an Environmental Foundation*, 45 WM. & MARY ENV'T L. & POL'Y REV. 579, 582-83 (2020).

[42] S. Kyle Montello, Comment: *The Right to Repair and the Corporate Stranglehold over the Consumer: Profits over People,* 22 TUL. J. TECH. & INTELL. PROP. 165, 183 (2020).

[43] Tom Espiner & Rebecca Wearn, *Right to Repair Rules Will Extend Lifespan of Products, Government Says*, BBCNEWS.COM (July 1, 2021), https://www.bbc.com/news/business-57665593 (citing analysis of consumer behavior by Colletta Smith).

[44] Aaron Perzanowski, *Consumer Perceptions of the Right to Repair,* 96 IND. L.J. 361, 392 (2021) (demonstrating that 80% of consumers in the article's study have this expectation for certain electronics).

[45] *Id*. at 393. In the same study, 70% of consumers said they would be less likely to buy products, or pay a reduced price for them, if they were aware beforehand that repair was restricted.

[46] *Nixing the Fix: An FTC Report to Congress on Repair Restrictions.* FED. TRADE COMM'N (May 2021),

a similar method in previous campaigns about violations of the Magnuson-Moss Warranty Act.[47] This work demonstrates that right to repair is not just a desire of a small group, but can also be a demand of consumers who may not have had full information when purchasing complex goods.

IV. Arguments Against Right to Repair

Policymakers should, however, also consider the other side of the argument here.[48] Manufacturers of high-tech farming equipment invest a lot of resources into creating their products, and they are entitled to protect their creations from intellectual theft. Many laws try to accomplish that, including the anti-circumvention section of the Digital Millennium Copyright Act, or DMCA.[49] Industry participants note that they provide many resources for customers to repair their own equipment, like tools, parts, and manuals, while also asserting that only a small percentage of repairs require high-tech expertise like software updates.[50] The Federal Trade Commission did not find these arguments to be sufficient enough to merit the repair restrictions currently in place.[51] They reached this conclusion through an analysis of the Magnuson-Moss Warranty Act, an evaluation of competition and antitrust in the repair market, and by reviewing various comments and materials.[52]

Another argument from manufacturers is that sophisticated farming equipment is less like cell phones and more like capital goods. [53] Performance-based contracts are the default in mission-critical products where capital investment is very high, like information technology, telecommunications, and aerospace.[54] Contracts in those sectors consistently include repair and maintenance. Those favoring farming equipment as capital goods must evaluate whether agriculture is mission-critical in the same sense; the evidence thus far from legislative efforts suggests that it is not.

Lastly, manufacturers also argue that enabling right to repair represents a serious threat to cybersecurity.[55] Manufacturers claim that complex agricultural devices contain a wealth of information that could be easily exposed to third parties at an independent repair shop or even with

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https://www.ftc.gov/system/files/documents/reports/nixing-fix-ftc-report-congress-repair-restrictions/nixing_the_fix_report_final_5521_630pm-508_002.pdf.

[47] *Id*. at 8.

[48] For a review of some of those arguments, *see* Marissa MacAneney, *If It Is Broken, You Should Not Fix It: The Threat Fair Repair Legislation Poses to the Manufacturer and the Consumer*, 92 St. John's L. Rev. 331 (2018).

[49] *See* Daniel Moore, *You Gotta Fight for Your Right to Repair: The Digital Millennium Copyright Act's Effect on Right-to-Repair Legislation*, 6 Tex. A&M L. Rev. 509 (2019).

[50] Tyne Morgan, *AEM, John Deere Respond to Biden's Planned Executive Order over Right to Repair Equipment,* AgWeb (July 7, 2021), https://www.agweb.com/news/policy/politics/aem-john-deere-respond-bidens-planned-executive-order-over-right-repair.

[51] Fed. Trade Comm'n, *supra* note 46, at 55.

[52] *Id*.

[53] *Id*. at 51.

[54] *"Power by the Hour": Can Paying Only for Performance Redefine How Products are Sold and Serviced?*, Knowledge@Wharton, Univ. of Pa. (Feb. 21, 2007), https://knowledge.wharton.upenn.edu/article/power-by-the-hour-can-paying-only-for-performance-redefine-how-products-are-sold-and-serviced/.

[55] Jennifer Alsever, *What Biden's "Right to Repair" Order Could Mean for Apple and Tesla*, Fortune (July 9, 2021, 2:47 PM), https://fortune.com/2021/07/09/right-to-repair-order-biden-apple-tesla-hacks/.

self-repair if the operator uses a remote scanning tool.[56] Independent shops or the consumer could also accidentally bypass many of the security protocols in place when conducting their repairs.[57] The Federal Trade Commission did not agree with these assertions, explaining that there was no evidence to suggest that independent shops were more likely than authorized dealers or retailers to compromise personal information, and that the tools being sought by right to repair advocates had a minimal probability of a security breach.[58]

In January 2023, advocates for right to repair made significant progress with right to repair by brokering a memorandum of understanding with John Deere that would allow for farmers to have access to the same information and tools as the manufacturer's repair shops.[59] While a valuable first step, it is important to consider that this agreement is voluntary and that it requires a considerable tradeoff: Farm Bureau representatives can no longer advocate for changes to right to repair laws at the state and federal levels.[60] Given the permanency of codified law versus the flexible nature of MOUs, this could be perceived as a setback; there are additionally potential antitrust concerns that could arise with this type of agreement. Regardless, this appears to be movement in the right direction for consumer rights, but one that still demands a more long-term plan.

In reality, many working in the agricultural sector could face extreme economic challenges if no action is taken by the government. While the voluntary efforts of manufacturers are certainly welcome, it is crucial to ensure that all manufacturers understand the needs of their customers and are appropriately responsive in a way that permits customers to repair their products safely and cost-effectively. This is a monopsony economy where options for the purchase of necessary equipment are limited. Historically, for example, there were as many as 160 tractor manufacturers in the United States, with far more than that selling related products.[61] As of 2017, only three major players exist in selling large farm tractors in the U.S.: John Deere, CNH Industrial, and AGCO represent the vast majority of the market due to widespread consolidation.[62] While some could argue that this makes voluntary participation in right to repair easier, it still represents a concentration of production power in few hands. The right to repair could disappear should one of the three major companies decide not to participate in the future, leaving consumers with nowhere

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[56] FED. TRADE COMM'N, *supra* note 46, at 55.

[57] Id.

[58] Id. at 31.

[59] *Memorandum of Understanding*, AM. FARM BUREAU FED. (Jan. 8, 2023), https://www.fb.org/files/AFBF_John_Deere_MOU.pdf.

[60] Id.

[61] Reibel, *supra* note 12.

[62] Id.

else to turn.

There is also the very real possibility of manufacturing companies finding solutions that comply with the letter of a law regarding right to repair, but not necessarily its spirit, as technology advances. One recent example in a related industry is Apple, which is facing similar pressures to offer more right to repair options to its consumers. Apple has been accused of encoding its Face ID authentication system within the original phone screen only on the iPhone 13.[63] This means that if the phone screen is replaced, even with an Apple-authorized screen, Face ID may not function without some intervention by the manufacturer.[64] The ability of law to maneuver every time a new advanced technology is added to a product is limited, and voluntary compliance would leave that up to the very companies that may be seeking to maximize repair revenue as their market share stabilizes or even declines. This is particularly relevant to agriculture given the consolidation described above; antitrust laws as they stand now provide some protections, but a more detailed solution is needed.

V. WHICH ROAD TO TAKE?

As the logic behind right to repair is found in both consumer protection and sustainability, it is clear that the solutions must be in line with those ideals. When faced with a problem as complex as right to repair in agriculture, many avenues are available to address it. Several have been described at length in other works.[65] Given the somewhat recent developments with the July 2021 executive order and other pushes from options like shareholder action and international developments, a more comprehensive resolution is merited.

A. EXECUTIVE ACTION

One such approach is by making use of executive power. In a July 9, 2021 executive order, President Biden directed the Federal Trade Commission to use its rulemaking authority to prevent manufacturers from using anticompetitive measures.[66] Specifically, Biden called on the FTC to take up the issue of manufacturer restrictions that act to prevent individual repair of farming equipment.[67] The FTC then voted unanimously twelve days later to enforce right to repair.[68] One major area of concern that this executive order seeks to remedy is that of excessive concentration of the market. Manufacturers in particular can potentially corner and dominate the market for

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[63] Evan Schuman, *Apple's Latest Right-to-Repair Trick is Delightfully Evil,* COMPUTERWORLD (Sept. 29, 2021), https://www.computerworld.com/article/3634384/apples-latest-right-to-repair-trick-is-delightfully-evil.html.

[64] Id.

[65] *See*, e.g., Mirr, *infra* note 74; Moore, *supra note 49*, and Dudding, *supra* note 10 for a broader discussion of federal and state legislative approaches.

[66] Exec. Order No. 14036, 86 C.F.R. 36987 (2021). "…(ii) unfair anticompetitive restrictions on third-party repair or self-repair of items, such as the restrictions imposed by powerful manufacturers that prevent farmers from repairing their own equipment". Biden's administration reaffirmed this call for right to repair and highlighted the progress that had taken place since the original executive order. *See* Lael Brainard, *Remarks as Prepared for Delivery by National Economic Council Director Lael Brainard on the Right to Repair*, WHITEHOUSE.GOV (Oct. 24, 2023), https://www.whitehouse.gov/briefing-room/speeches-remarks/2023/10/24/remarks-as-prepared-for-delivery-by-national-economic-council-director-lael-brainard-on-the-right-to-repair/.

[67] Id.

[68] FED. TRADE COMM'N, POLICY STATEMENT OF THE FEDERAL TRADE COMMISSION ON REPAIR RESTRICTIONS IMPOSED BY MANUFACTURERS AND SELLERS (July 21, 2021).

farming equipment by placing software walls between the user and the broken program. Antitrust laws are one key component of combating this issue, and this executive order adds additional strength.

There are, of course, limits to executive action as the selected method to address a problem like the right to repair. The impermanence of an executive order could lead a subsequent presidential administration to issue another order that alters the course of that branch's guidance on antitrust and anti-competition measures, a simple act requiring no input from the other branches.[69] While the FTC's rules and standards make right to repair more concrete, the steering of the FTC's ship can again change with a new presidential administration. Also of some concern is the increasing reliance on executive orders by presidents[70]; Donald Trump, for example, issued 220 executive orders during his four year presidency, compared to Barack Obama's 277 and George W. Bush's 291 over the course of eight years each.[71] Biden has used fewer but still a high number, with 128 issued as of December 14, 2023.[72] Repeatedly attempting to resolve perceived concerns via executive orders could work to undermine future ones. Executive orders may need strengthening and reinforcement to ensure the longevity of right to repair laws.[73]

B. FEDERAL LEGISLATION

Another possible avenue is a federal law, rulemaking by federal agencies, or a mandate. A federal law may initially seem to be a suitable method, as it avoids many of the pitfalls of state legislation. Placing an emphasis on the federal option has been discussed in other works.[74] The DMCA, discussed later, is one such federal law that can be applied to right to repair.[75] Federal legislation as an option has recently been pursued, in part, through the Fair Repair Act, proposed by Congressman Joseph Morelle in June 2021 and sent to the House Committee on Energy and Commerce.[76] The Fair Repair Act focused specifically on access to parts and tools from original

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[69] *What is an executive order?* AM. BAR ASS'N. (January 25, 2021), https://www.americanbar.org/groups/public_education/publications/teaching-legal-docs/what-is-an-executive-order/.

[70] Tara L. Branum, *President or King: The Use and Abuse of Executive Orders in Modern-Day America*, 2 J. OF LEGIS. 1,1 (2002).

[71] *Executive Orders*, FED. REG., https://www.federalregister.gov/presidential-documents/executive-orders (last visited Dec. 13, 2023).

[72] Id.

[73] James Seddon & Darrell M. West, *President Biden's Right to Repair Order Needs Strengthening to Aid Consumers,* BROOKINGS INSTITUTION (July 14, 2021), https://www.brookings.edu/blog/techtank/2021/07/14/president-bidens-right-to-repair-order-needs-strengthening-to-aid-consumers/.

[74] Nicholas A. Mirr, Note. *Defending the Right to Repair: An Argument for Federal Legislation Guaranteeing the Right to Repair.* 105 IOWA L. REV. 2393 (2020).

[75] *See* Moore, *supra* note 49.

[76] Fair Repair Act, H.R. 4006, 117th Cong. (2021).

equipment manufacturers (OEMs), in particular highlighting products covered by an express warranty and with a wholesale price in excess of $100.[77] For that group of products with digital electronic equipment, OEMs would need to enable repair during the warranty period "at an equitable price and convenience of delivery and of enabling functionality" by providing access to those tools and parts.[78] Like President Biden's executive order, enforcement takes place through the Federal Trade Commission.[79]

Federal action by itself, though, will be insufficient. Other approaches – grassroots efforts, plaintiff/defendant strategy, state laws, shareholder initiatives, contract rights like warranties, and comparative laws in other countries combined can shore up the weaknesses of solely federal action, discussed below.

C. Grassroots Efforts

A related option is a grassroots-level petition that makes its way into formal legislation. This has previously taken place with cell phones. The Digital Millennium Copyright Act (DMCA) amended the Copyright Act of 1976 in response to improved and more widespread access to digital works that involve copyright, essentially making the copying and downloading of copyrighted works illegal.[80] The Library of Congress discusses triennially whether to renew or end certain exemptions to the DMCA's ban on circumvention of copyrighted software and applications.[81] The Register of Copyrights makes recommendations after receiving petitions from different parties that comment on the exemption's adoption or renewal.[82] In 2010, the Library of Congress provided a list of six categorical exemptions to the enforcement of the DMCA, including the unlocking of cell phones in large part to permit consumers to switch carriers if desired.[83] In 2013, it removed the unlocking of cell phones from their exemption list for anti-circumvention. Over 114,000 people signed a petition calling on the restoration of the exemption to the DMCA.[84] The end result was action by Congress to repeal the previous rule and restore the exemption from 2010 through the Unlocking Consumer Choice and Wireless Competition Act.[85]

D. Lawsuits

Another approach to ensuring the right to repair in agriculture is the use of an affirmative defense. For example, within copyright law, a farmer circumventing the firmware requirements

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[77] Id. at § 2(b).

[78] Id.

[79] Id. at § 3.

[80] *Breaking the Digital Locks: Librarian Rules on Anticircumvention Exemptions,* LIBR. OF CONG. (Oct. 2010), https://www.loc.gov/loc/lcib/1010/dmca.html.

[81] 17 U.S.C. 1201(a)(1)(C) (2012). *See also* U.S. COPYRIGHT OFF. (2018). SECTION 1201 RULEMAKING: SEVENTH TRIENNIAL PROCEEDING TO DETERMINE EXEMPTIONS TO THE PROHIBITION ON CIRCUMVENTION (2018), https://cdn.loc.gov/copyright/1201/2018/2018_Section_1201_Acting_Registers_Recommendation.pdf.

[82] Id.

[83] LIBR. OF CONG., *supra* note 80.

[84] Ezra Mechaber, *Here's How Cell Phone Unlocking Became Legal,* OBAMA WHITE HOUSE ARCHIVES (Aug. 15, 2014, 12:53pm ET), https://obamawhitehouse.archives.gov/blog/2014/08/15/heres-how-cell-phone-unlocking-became-legal.

[85] Unlocking Consumer Choice and Wireless Competition Act, S. 517, 113th Cong. (2014).

could try to justify their actions using the well-known Fair Use Doctrine.[86] This would be a broader strategy under the Copyright Act of 1976 than having an enumerated exemption similar to the DMCA discussion above. While usually reserved for nonprofit endeavors, the possibility remains of for-profit fair use depending on how the copyrighted material is used, although the likelihood of success would be rather low.[87]

Other plaintiffs in the judicial system could try claims under the Sherman Act or Clayton Act, essentially seeking to create precedent that the particular economic activity being engaged in is antitrust in nature; other legal researchers and practitioners have covered these alternatives in great detail.[88] This could be effective given the Court's recent preference for the rule of reason in antitrust cases.[89] Contract law is another possible option, with warranty and unconscionability claims as potential avenues; warranties will be discussed briefly later.[90] Lastly, the rather vague public policy claim could be made in the court system; courts are notoriously reluctant to violate a contractual agreement based on public policy, however, as doing so causes the court to create new public policy and upend the traditional mechanism of precedent.[91]

E. STATE LEGISLATION

Individual state laws regarding right to repair in the agriculture industry may initially seem like the most fruitful approach from a legislative standpoint, but they have been far from successful – largely for political reasons. Justice Brandeis famously noted one of the key advantages of federalism, that a "single courageous State may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country."[92] Focusing on individual states could work to prevent unintended consequences of laws crafted on a national scale, as behaviorists and economists have noted can often be the case.[93] The use of state common law is effective to some extent in providing consumer protections, but codifying a law strengthens it substantially. A purely federal approach, by contrast, leaves open the possibility of agency inaction; if the FTC is empowered to protect consumers through right to repair laws but fails to take action to do so for whatever reason, there could be little recourse for consumers due to the

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[86] *See* Suarez, *supra* note 7.
[87] Id. at 516.
[88] Id. at 523.
[89] *See* FED. TRADE COMM'N, *supra* note 28.
[90] *See* Suarez, *supra* note 7, at 526.
[91] David Adam Friedman, *Bringing Order to Contracts Against Public Policy*, 39 FLA. ST. U. L. REV. 563, 565 (2012).
[92] New State Ice Co. v. Liebmann, 285 U.S. 262 (1932), at 311.
[93] Roger I. Roots, *When Laws Backfire: Unintended Consequences of Public Policy*, 47 AM. BEHAV. SCI. 1376, 1378 (2004).

doctrines of non-reviewability and standing that prevent many lawsuits against federal agencies.[94] There are many other benefits to centering the approach on state law rather than federal; in addition to the improvements and innovations that states can provide by applying right to repair laws to their particular circumstances, state laws can be enforced more efficiently by those closer to the event, as articulated in other forms of consumer protection.[95] State laws like California's Cartwright Act, found in a state with frequent antitrust litigation, can serve as a blueprint to other states in similar situations.[96]

Industry capture, however, is also a very real concern for legislative attempts at right to repair. Many efforts so far have been successfully challenged with the assistance of lobbying interests that prefer to keep the status quo, as happens consistently with consumer protection efforts.[97] Keeping legislation at the state level, for example, may logically run afoul of those states' strongest industries and potentially harm their economies. Combining state efforts with the others mentioned here can mitigate the effects of industry capture at the state level.

The movement encouraging states to assess action on right to repair is improving, but actual state legislation had not been successful in being passed into law until very recently. Some progress was made in 2023, with Colorado, California, New York, and Minnesota passing some form of right to repair.[98] At least half of U.S. states are actively considering some form of right to repair law in their state legislatures, although earlier efforts met with limited results.[99] Arkansas and Nebraska, for example, introduced right to repair laws that did not reach full discussion by those chambers.[100] Nebraska's Fair Repair Act drew considerable interest upon its introduction as a testing ground for a state agricultural law[101], but its spiritual successor, the Agricultural Equipment Right-to-Repair Act, stalled in committee.[102] Massachusetts was for a long time the only state to have passed a limited right to repair for automobiles.[103] Automakers under this law must provide certain types of diagnostic information to shops and owners as of 2012; this was then expanded in 2020 to include vehicle computer data.[104] This is progress in a comparable industry, but is

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[94] Amy Widman, *Advancing Federalism Concerns in Administrative Law through a Revitalization of State Enforcement Powers: A Case Study of the Consumer Product Safety and Improvement Act of 2008*, 29 YALE L. & POL'Y REV. 167, 190 (2011).

[95] Dee Pridgen, *The Dynamic Duo of Consumer Protection: State and Private Enforcement of Unfair and Deceptive Trade Practice Laws,* 81 ANTITRUST L.J. 911, 929 (2017).

[96] Cal. Bus. & Prof. Code §§ 16600 *et seq*.

[97] Widman, supra note 94, at 179. *See also* Perzanowski, *supra* note 44. This is portrayed to humorous effect in the 2005 film *Thank You for Smoking*, where the character Senator Ortolan Finistirre, portrayed by William H. Macy, proclaims "the great state of Vermont will not apologize for its cheese!". THANK YOU FOR SMOKING (Room 9 Entertainment 2005).

[98] *Right to Repair 2023 Legislation*, NATL. CONF. OF STATE LEGIS., https://www.ncsl.org/technology-and-communication/right-to-repair-2023-legislation (last visited Dec. 13, 2023).

[99] Nathan Proctor, *Half of U.S. States Looking to Give Americans the Right to Repair*, U.S. PUB. RSCH. GRP., (Mar. 10, 2021), https://uspirg.org/blogs/blog/usp/half-us-states-looking-give-americans-right-repair.

[100] S.B. 461, 93rd Gen. Assemb., Reg. Sess. (Ark. 2021), https://www.arkleg.state.ar.us/Bills/Detail?id=SB461&ddBienniumSession=2021/2021R.

[101] Dudding, *supra* note 10, at 124.

[102] L.B. 543, 107th Leg., First Sess. (Neb. 2021), https://nebraskalegislature.gov/bills/view_bill.php?DocumentID=44446.

[103] Christian M. Wade, *Advocates Push for Electronics "Right to Repair" Law*, GLOUCESTER TIMES (Oct. 4, 2021), https://www.gloucestertimes.com/news/advocates-push-for-electronics-right-to-repair-law/article_20395f22-2562-11ec-9b12-8b5e7bdbccd2.html.

[104] Id.

insufficient at this point.

Of course, state legislation is not done in isolation. Nonprofit organizations often provide templates to state lawmakers that encourage them to adopt an approach that best serves their needs and platforms. The Repair Association is a good example, as their template has lent support to efforts to pass right to repair laws in thirty-two states.[105] It has likewise been very active on the federal level in advocating for exemption requests and reform of the DMCA anti-circumvention statute, as well as working with administrative agencies on regulations and standards.[106] Another nonprofit organization that has been active in promoting right to repair has been the Farm Bureau. There is a National Farm Bureau Federation as well as state chapters; the national organization has backed right to repair, as have several of the state chapters like the Texas Farm Bureau.[107]

One of the benefits of having nonprofit organizations and advocacy groups coordinate state legislative efforts is that the common approach can avoid perceived extreme proposed legislation that pushes one or both sides away from the bargaining table. Figures within both the farming community and manufacturing entities warn of laws that are too broad or are politically unpalatable. One such attempt took place in California: the more encompassing measure before the California state legislature failed, but an accord between the California Farm Bureau and equipment manufacturers that was more tailored in scope proved effective.[108] The key consideration that made the Farm Bureau's negotiation more suitable was that it eliminated access of farmers to source code; manufacturers are reticent to provide source code, as they claim it could lead to intellectual property violations as well as unsafe repairs.[109]

Adjusting already existing laws that affect repair could also be impactful to the right to repair movement. In Arkansas, the passage of the Arkansas New Farm Machinery Quality Assurance Act, better known as the Farm Machinery Lemon Law, strengthened the ability of agricultural consumers in the state to require manufacturers or dealers to repurchase newly purchased or leased malfunctioning farm equipment.[110] Laws like this help to expand consumer protection concepts from the automobile industry to fill in gaps that are not covered in original manufacturer warranties, but they could also be detrimental. Consumers are provided with a

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[105] *Legislation*, The REPAIR ASSOC., https://www.repair.org/legislation (last visited Dec. 13, 2023).

[106] Id.

[107] Jennifer Whitlock, *Right-to-Repair Executive Order Urges Competition Among Agribusinesses*, TEX. FARM BUREAU (July 15, 2021), https://texasfarmbureau.org/right-to-repair-executive-order-urges-competition-among-agribusinesses/.

[108] Jamie Johansson, *Right-to-Repair Absolutists Miss the Point on Farm Equipment Agreement*, CAL. FARM BUREAU FED'N., https://www.cfbf.com/ag-advocacy/all-issues/farm-equipment-repair (last visited Dec. 13, 2023).

[109] *Id.*

[110] ARK. CODE ANN. § 4-96-304 (2019).

detailed, specific method of obtaining relief under lemon laws, but they also must carefully follow the remedies of those laws. Under Arkansas's law, the consumer may have to wait up to 30 days for their equipment to be out of commission for one nonconformity issue or scaled to the cost of repair 60 days for all issues; similarly, manufacturers or dealers could have up to three or five attempts to make the repair, respectively, before replacement or repurchase is required.[111] Other states, like Minnesota, have had similar laws in place for longer, which may provide more information on how agricultural lemon laws affect the right to repair movement.[112]

There are other considerations in play as well that favor a state-based economic approach. Some in the engineering community assert that developing a national right to repair law is a solution that does not fully address the problem.[113] Similar to Justice O'Connor's dissent in *South Dakota v. Dole*, where she argued that raising the drinking age to 21 was not sufficiently related to solving the epidemic of drunk driving[114], the Fair Repair Act and President Biden's executive order may be an imperfect fit to fixing the real issue: the cost of repair. Regulating the costs of repair instead in the agriculture industry could make visits to the dealership (or house calls from the dealership) more feasible. States could, for example, implement repair cost caps that are appropriate for the cost of repairs in their jurisdiction. There, however, could be some unforeseen consequences from doing so, such as lower quality of repairs, or manufacturers may seek other ways to charge consumers additional fees to make up the difference.

States also have the power and interest to create laws that best fit their economic and labor circumstances. Each state, for example, can set a minimum wage that makes the most sense for its labor force, with the federal minimum wage serving as the lower boundary.[115] Agricultural equipment repair may not immediately implicate the minimum wage, but state regulation of the workforce connects to how people make repairs in general. States have police powers; improving the livelihoods of farmers within their borders is, in substantial part, their domain. While the Federal Trade Commission has formally adopted right to repair after Biden's executive order, federal legislation has yet to be perfected, and it is not understood that state-based distinctions are going to be taken into account. In passing state-based laws, individual states can focus their knowledge of their state's labor market to create legislation that works best for them. This also aligns with the philosophy behind labor theory in general, as the ability to repair by consumers limits waste and assists with developing the social value of the product in line with John Locke's perspective of labor.[116] As a result, the state-level right to repair laws preserve crucial labor rights that have already been granted in part to the state. This still leaves room for a federal mechanism (similar to how a national minimum wage exists, but states may have higher ones if they so choose,

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[111] *Id.*

[112] *See* Terence J. Centner, *Minnesota's Lemon Laws: Sour Options for Consumers of Farm Tractors*, 18 HAMLINE L. REV. 347, 350 (1995); Terence J. Centner and Michael E. Wetzstein, *Obligations and Penalties under Lemon Laws: Automobiles versus Tractors*, 20 J. OF AG. AND RESOURCE ECON. 135 (1995).

[113] G. Pascal Zachary, *What the Right to Repair Movement Gets Wrong,* IEEE SPECTRUM (March 26, 2020), https://spectrum.ieee.org/wrong-right-to-repair.

[114] *South Dakota v. Dole*, 483 U.S. 203, 212-213 (1987).

[115] *Minimum Wage*, U.S. DEPT. OF LAB. (2021). https://www.dol.gov/general/topic/wages/minimumwage.

[116] Leah Chan Grinvald and Ofer Tur-Sinai, *Intellectual Property Law and the Right to Repair*, 88 FORDHAM L. REV. 63, 89 (2019).

or even lower ones if the labor involved is purely intrastate) that can cooperate with state laws.

One perceived concern with state-level right to repair laws is preemption. As noted previously, Congress has passed several laws that relate to right to repair, including the Digital Millennium Copyright Act, or DMCA.[117] DMCA within agriculture has been discussed substantially in other works.[118] Preemption has been used as an argument for rejecting laws at the state level when those laws were in discussion at the state legislatures.[119] Though the Copyright Preemption Statute of the Copyright Act would appear at face value to preempt state-level attempts at right to repair thus justifying its opposition, neither the intent of the state legislature nor of Congress in crafting these respective laws appears to demand preemption. The state right to repair laws are meant to be consumer protection laws, which fall under the traditional power of the states[120]; Congress did not intend for the DMCA to function like other copyright laws, as evidenced in the legislative history of its genesis.[121]

The protection that Congress has provided to copyright holders via the DMCA is not mutually exclusive with right to repair in the long term. The exemptions to the DMCA discussed earlier are one such example. Some of the stated broader justifications for opposition to right to repair via copyright law – promoting scientific advancement and innovation through protecting intellectual property – can be counterbalanced by an expanded definition that is not limited to market mechanisms but rather defines progress as including environmental concerns and maximizing consumer satisfaction and utility through more use of products that can be repaired.[122]

States have also adopted their own iterations of antitrust laws, or "mini-Sherman Acts". These laws can be quite useful to plaintiffs in giving consumers additional avenues for lawsuits, but they also generate compliance issues for industries that now need to comply with many different antitrust laws. The courts have regularly determined that the federal Sherman Act does not preempt state antitrust laws but instead runs parallel when there is no conflict that exists between the two.[123] While effective in preventing some monopoly and monopsony behaviors, state laws still tend to be a patchwork of rights and regulations when consistency is needed across state boundaries for this critical concern. State antitrust laws can vary considerably; for example,

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[117] 17 U.S.C. § 1201 (2012).

[118] *See* Dudding, *supra* note 10.

[119] Moore, *supra* note 49, at 517.

[120] *Id*. at 521.

[121] *Id*. at 522-23.

[122] *E.g.*, Stefan Wrbka & Larry A. DiMatteo, *Comparative Warranty Law: Case of Planned Obsolescence*, 21 U. PENN. J. OF BUS. L. 907, 973 (2019).

[123] Richard A. Samp, *The Role of State Antitrust Law in the Aftermath of* Actavis, 15 MINN. J.L. SCI. & TECH. 149, 151-152 (2014).

California's Cartwright Act is quite strong compared to other states. It is especially concerned with vertical integration between seller and supplier; Amazon.com was sued under the Cartwright Act in 2022 on these grounds after a failed lawsuit in Washington, D.C.[124] While differing laws between states could yield benefits in finding a suitable one that could be adopted by others, it still leads to problems for both plaintiff and defendant alike in forum selection and increased costs of compliance.

F. SELF-REGULATION

A possible counterargument to reducing the cost of repairs in addition to establishing a right to repair is that the product in question may be too complex to make repair costs lower and also allow the industry and manufacturer to remain profitable. While antitrust laws focus on consumer protection, it is helpful to consider the motivations of industry and manufacturers in designing products.

There is ample evidence, though, that redesign of complex products is effective. Companies could respond to market forces and demands to reimagine products that are both safer and can be repaired by consumers or independent repair firms. One example is the Microsoft Surface Laptop 3, which was notoriously difficult to repair earlier in its product life cycle. Microsoft was able to create a new version of the Surface Laptop which has been far easier to repair without dramatically changing the essential nature of the product.[125]Agricultural practitioners and scholars have discussed several ways to lower the costs of designing and manufacturing this equipment, including better linking the concept, design, and implementation stages, improving relationships with suppliers for standard components, and increased use of systems engineering tools.[126] This suggests that industry has many of the tools needed to facilitate right to repair.

Self-regulation, however, has its challenges. In a May 2021 report on the state of Right to Repair, the Federal Trade Commission noted that self-regulation requires flexibility and negotiation.[127] Given the current state of affairs with agricultural equipment manufacturers, that may be easier said than done. While manufacturers have shown some ability to negotiate with advocacy and lobbying groups like Farm Bureau and with government organizations on the topic of right to repair, there are not enough concrete results to say that self-regulation is adequate.

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[124] Dan Papscun, *Amazon Faces Expansive California Antitrust Law in Pricing Suit*, BLOOMBERG LAW (Sept. 21, 2022), https://news.bloomberglaw.com/antitrust/amazon-faces-expansive-california-antitrust-law-in-pricing-suit.

[125] Thorin Klosowski, *Wirecutter Blog: What You Should Know About Right to Repair*, N.Y. TIMES (July 15, 2021). https://www.nytimes.com/wirecutter/blog/what-is-right-to-repair/.

[126] John F. Reid, William R. Norris, and John Schueller*, Reducing the Manufacturing and Management Costs of Tractors and Agricultural Equipment,* 5 CIGR J. OF SCI. RSCH. AND DEV. 1 (2003).

[127] *Nixing the Fix: An FTC Report to Congress on Repair Restrictions.* FED. TRADE COMM'N (May 2021), https://www.ftc.gov/system/files/documents/reports/nixing-fix-ftc-report-congress-repair-restrictions/nixing_the_fix_report_final_5521_630pm-508_002.pdf.

G. SHAREHOLDER INITIATIVES

While direct action from the federal or state governments may be the first option that comes to mind to ensure the right to repair, others exist. Another strategy could be to challenge company policy at the shareholder level. In mid-September 2021, shareholders of John Deere and Apple – in collaboration with the U.S. Public Interest Research Group, a nonprofit federation advocacy organization, via its mutual fund company that emphasizes social responsibility, Green Century Funds – filed shareholder proposals with the companies over their perceived anti-repair policies.[128] The shareholders argue that the two firms' stances on right to repair are in contradiction with their company policies: Apple's e-waste opposite its commitment to the environment, and John Deere opposite the work ethic of the agricultural community, respectively.[129]

Shareholder interest in corporate affairs beyond profit maximization has been a central part of theories on how business, government, and society interact for the last fifty years.[130] With the advent of the stakeholder model of business-government-society relations, it is well understood that shareholders (and other forces like Green Century Funds) have a strong voice in determining what corporations can and cannot do.[131] Non-governmental organizations (NGOs) have been a primary motivator behind socially responsible investing, and the combination of financial and non-financial elements is appealing to a growing number of shareholders.[132]

Shareholder initiatives have already been at least somewhat successful in other parts of the right to repair movement. On October 7, 2021, after pressure from a shareholder activist group called As You Sow, Microsoft committed to explore improved repair options for product consumers.[133] Once the shareholder resolution put forth by As You Sow was withdrawn, Microsoft agreed to assist with a third-party study on the impacts of increased right to repair, expand some parts and repair information outside of its authorized network, and help create and strengthen new

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[128] Ben Lovejoy, *AAPL Shareholder Resolution Calls for Company to Support Right to Repair.* 9TO5MAC (Sept. 16, 2021), https://9to5mac.com/2021/09/16/aapl-shareholder-resolution-repair/.

[129] *Green Century Files Shareholder Proposal with Deere & Co., Concerned by the Impact of the Manufacturer's Restrictive Repair Policies on Farmers*, GREEN CENTURY FUNDS (Sept. 13, 2021), https://www.greencentury.com/green-century-files-shareholder-proposal-with-deere-co/.

[130] *See* Thomas Hay, Note: *The Shareholder's Role in Corporate Social Responsibility*, 5 U.MICH. J.L. 68 (1971), for an overview of some of the founding original principles. *Cf. Dodge v. Ford Motor Co.*, 204 Mich. 459, 170 N.W. 668 (Mich. 1919) (establishing the principle that companies are to be run for the benefit of their shareholders).

[131] *See* GEORGE A. STEINER & JOHN F. STEINER, BUSINESS, GOVERNMENT, AND SOCIETY: A MANAGERIAL PERSPECTIVE (13th ed. 2011), (for a basic description of the four models of B-G-S relationships).

[132] Terrence Guay, Jonathan P. Doh, & Graham Sinclair, *Non-Governmental Organizations, Shareholder Activism, and Socially Responsible Investments: Ethical, Strategic, and Governance Implications,* 52 J. BUS. ETHICS 125, 126-27 (2004).

[133] *Microsoft Agrees to Expand Consumers' Repair Options*, ASYOUSOW (Oct. 7, 2021), https://www.asyousow.org/press-releases/2021/10/7/microsoft-agrees-expand-consumers-repair-options.

local repair options.[134] If Microsoft accomplishes its platform in this statement, that will bolster repair options for its previously difficult to repair devices like the Surface discussed above.[135] This achievement suggests that shareholder initiatives are viable methods to bring manufacturers to negotiate with customers and their advocates. It also indicates that mixed methods like self-regulation and shareholder initiatives, when combined with the executive order that helped to drive this action to fruition by applying appropriate pressure on industries to comply, can be the effective solution that this complex problem needs.

H. WARRANTIES

Another option to consider is to strengthen existing warranties, as an element of contract law, to the point at which repair is to be expected instead of replacement. Planned obsolescence can lead to waste, although it should be noted there is not always a clear connection since recycling and closed loops decrease some waste. It would be overly optimistic to try entirely eliminating waste, so motivating firms to move to reuse of raw materials is a better alternative. The options that are given within right to repair do not necessarily state a preference of repair over replacement. Arkansas's lemon law, discussed earlier, gives manufacturers the ability to select repair or replacement.[136] Encouraging repair and reuse rather than generating waste is one effective strategy employed by Tesla Motors, which repurposes its batteries in a closed-loop recycling system.[137] By requiring a duty and expectation of repair from manufacturers and discouraging replacement, environmental issues of sustainability could be improved.

I. A COMPARATIVE APPROACH

Other nations have also passed laws governing right to repair. The United Kingdom, for example, introduced legislation in 2021 to make parts available for electronic products, while the European Commission is looking into smartphones and tablets.[138] In March 2023, the EU Commission adopted a proposal making right to repair easier for consumers.[139] Both the UK and the EU have made considerable strides in ensuring that products are reliable and can be repaired. While these initiatives are concentrated mainly in other industries, many of the ideas involved in the laws are appropriate for improving right to repair in farming efforts in the United States.

The United Kingdom's 2021 law regarding right to repair places an emphasis, like its EU counterparts, on reducing e-waste and planned obsolescence. It requires manufacturers to improve spare parts availability while also adjusting energy efficiency standards.[140] Yet some of the major

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[134] *Id.*

[135] Klosowski, *supra* note 125.

[136] ARK. CODE ANN. § 4-96-304 (2019).

[137] Johnna Crider, *Tesla's Recycled Batteries: Almost 92% Reuse of Raw Materials*, CLEANTECHNICA.COM (May 8, 2022), https://cleantechnica.com/2022/05/08/teslas-recycled-batteries-almost-92-reuse-of-raw-materials/.

[138] Cody Godwin, *Right to Repair Movement Gains Power in US and Europe*, BBCNEWS (July 7, 2021), https://www.bbc.com/news/technology-57744091.

[139] EUR. COMM'N, *Right to Repair: Commission Introduces New Consumer Rights for Easy and Attractive Repairs*, https://ec.europa.eu/commission/presscorner/detail/en/ip_23_1794 (Mar. 22, 2023).

[140] Adam Speight, *The UK's Right to Repair Law Already Needs Repairing*, WIRED (July 10, 2021 6:00AM), https://www.wired.co.uk/article/right-to-repair-uk; Espiner & Wearn, *supra* note 38.

players in generating waste and planned obsolescence, like Apple, are not covered by this new law; smartphones and laptops are exempted from these obligations.[141] The main takeaway from the British approach is to ensure that, should America choose federal legislation to codify right to repair, it must not leave out major parties. An agricultural right to repair, for instance, should have all of the major manufacturers and dealers included under the law so that change is not just on paper.

European Union lawmakers view right to repair differently from their American counterparts. The producer or manufacturer has more responsibility for what eventually happens to its products through the polluter pays principle.[142] Manufacturers also have more obligations in the design phase since EU law expects goods to be designed from the outset to be easily repaired.[143] One benefit of the EU's Consumer Sales Directive, or CSD, is that consumers (buyers) are the ones who choose whether to repair or replace.[144] This stands in contrast with many American laws, which grant the manufacturer the choice within certain confines of the number or total cost of repairs. Adding a buyer-friendly option meets the environmental component of the philosophy behind right to repair and would be a welcome addition to American legal efforts.

France has adopted a market-based approach that strengthens consumer information instead of a direct mandate for right to repair. As of 2023, electronics manufacturers are required to issue a score with the products that they build, which explains its availability and price of spare parts, the readiness of free technical information, and how easy it is to open the product for repair, among other elements.[145] The final score is then combined into a Reliability Index.[146] The major concept behind this type of law is to form a more complex and comprehensive Sustainability Index by 2024.[147]

The overall focus of the French reliability index law meshes well with what American advocates are trying to accomplish in the U.S., and it fits well with the agricultural industry's need for reform. The law has a stated purpose of encouraging consumer information, avoiding

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[141] *Id.*

[142] Emily G. Brown, Note: *Time to Pull the Plug? Empowering Consumers to Make End-of-Life Decisions for Electronic Devices through Eco-Labels and Right to Repair*, 2 U OF. ILL. J. OF L., TECH. & POL'Y 227, 237 (2020).

[143] Perzanowski, *supra* note 44, at 389.

[144] *See* Wrbka & DiMatteo*, supra* note 122.

[145] Loi 2020-105 du 10 fév 2020 relative à la lutte contre le gaspillage et à l'économie circulaire

[Law 2020-105 of Feb. 10, 2020, on the Fight against Waste and the Circular Economy], JOURNAL OFFICIEL DE LA RÉPUBLIQUE FRANÇAISE [J.O.] [OFFICIAL GAZETTE OF FRANCE], Feb. 11, 2020, p. 1. https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000041553759.

[146] *Id.*

[147] MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE, *supra* note 40.

obsolescence, and preserving natural resources, all suitable goals for American advocates' drive to improve the farmer's financial well-being.[148] One area of concern regarding application of these ideas to the right to repair in U.S. agriculture is, as noted earlier, the absence of competition in purchasing equipment.[149] It may be necessary, then, to more closely regulate the cost of repair as well as provide more information for the consumer if something similar to this law was adopted in America. Implementing a French-style repairability score, though, could be difficult. Self-reporting requires some sort of oversight mechanism to ensure that manufacturers are being truthful; doing so costs time and money.[150] The auditing mechanisms in place at present in the United States are likely inadequate for this system given the already present strain on government resources.

In summary, U.S. proponents of farmers' right to repair, either in legislation or other forms, can learn from what has taken place in other countries. Although electronics and farm equipment are not the same industry, the broader lessons from other nations can be instructive. Laws should be comprehensive and not leave large loopholes; the solution to repair prices could stress producer action rather than concentrate on the consumer. A user-friendly education campaign like that in France may help agricultural machinery consumers choose products from manufacturers that have invested in ease of repair and durability.

VI. CONCLUSION: SO WHICH COMBINATION WORKS BEST?

The Repair Association's legislation advocacy page succinctly and accurately describes the conflict inherent in just choosing one method or the other in asserting, "[t]here is no single solution."[151] It clearly states that a mix of both federal and state approaches are needed: copyright reform needs to be taken care of at the federal level (states have limited power in that area), but requiring manufacturers to share information – as seen in Massachusetts's law – is a state-level concern.[152] Other countries have given American lawmakers some possible laws to follow, but it is still unclear what the longer-term effects of those will be. Complicating matters is the distinct nature of America's federal system, which others do not necessarily share. British and French governments are more centralized in form, and the U.S. gives its federal government less power to effect change at the scale needed for right to repair.[153] The U.S. has a natural separation between its public and private spheres that other nations do not share to the same degree. The logical result from this is solutions to problems like right to repair need a government (federal and state), nonprofit, and private aspect in order to be the most successful.

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[148] *Id.*

[149] Mock, *supra* note 62.

[150] Maddie Stone, *Why France's "New Tech" Repairability Index is a Big Deal*, WIRED (Feb. 20, 2021), https://www.wired.com/story/frances-new-tech-repairability-index-is-a-big-deal/.

[151] THE REPAIR ASSOC., *supra* note 105.

[152] *Id.*; Wade, *supra* note 103.

[153] *See* Martin A. Rogoff, *A Comparison of Constitutionalism in France and the United States,* 49 ME. L. REV. 21, 23 (1997); Christopher Pollitt and Hilkka Summa, *Trajectories of Reform: Public Management Change in Four Countries*, 17 PUB. MONEY & MGMT. 1, 7 (2010).

What may work best for U.S. agriculture is the following, based on what has been covered in this article: a minimum standard set by federal laws that does not completely preempt via copyright law but instead grants the necessary, permanent exemptions to the DMCA, combined with state legislation that is developed and guided in part by nonprofit organizations and advocacy groups like the Repair Association and the National Farm Bureau Federation. States can then modify the details and provisions of the template law to best suit their purposes but still retain the narrowness in scope so that consumers do not risk injury and manufacturers do not risk exposure of their protected information in areas of copyright like source code. Self-regulation by manufacturers can be counterbalanced by shareholder initiatives, which ensure that companies are following their stated values. This follows both the consumer protection philosophy and product sustainability ideas that reinforce the reasoning behind right to repair in the first place. All of these laws, rules, and regulations can be adapted for the forthcoming subscription service economy and additional large-scale changes that will happen. An approach that makes use of these many mechanisms should be flexible enough to adjust to the changes that will happen to products, services, and repair in the future.