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### Intellectual Property Law and the Right to Repair

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# INTELLECTUAL PROPERTY LAW AND THE RIGHT TO REPAIR

*By Leah Chan Grinvald\* & Ofer Tur-Sinai†*

## ABSTRACT

*In recent years, there has been a growing push in different U.S. states towards legislation that would provide consumers with a “right to repair” their products. Currently 18 states have pending legislation that would require product manufacturers to make available replacement parts and repair manuals. This grassroots movement has been triggered by a combination of related factors. One such factor is the ubiquity of microchips and software in an increasing number of consumer products, from smartphones to cars, which makes the repair of such products more complicated and dependent upon the availability of information supplied by the manufacturers. Another factor is the unscrupulous practices of large, multinational corporations designed to force consumers to repair their products only through their own offered services, and ultimately, to manipulate consumers into buying newer products instead of repairing them. These factors have rallied repair shops, e-recyclers, and other do-it-yourselfers to push forward, demanding a right to repair.*

*Unfortunately, though, this legislation has stalled in many of the states. Manufacturers have been lobbying the legislatures to stop the enactment of the right to repair laws based on different concerns, including how these laws may impinge on their intellectual property rights. Indeed, a right to repair may not be easily reconcilable with the United States’ far-reaching intellectual property rights regime. For example, requiring manufacturers to release repair manuals could implicate a whole host of intellectual property laws, including trade secret. Similarly, employing measures undercutting a manufacturer’s control of the market for replacement parts might conflict with patent exclusivity. Nonetheless, this Article’s thesis holds that intellectual property laws should not be used to inhibit the right to repair from being fully implemented.*

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*In support of this claim, this Article develops a theoretical framework that enables justifying the right to repair in a manner that is consistent with intellectual property protection. In short, the analysis demonstrates that a right to repair can be justified by the very same rationales that have been used traditionally to justify intellectual property rights. Based on this theoretical foundation, this Article then explores, for the first time, the various intellectual property rules and doctrines that may be implicated in the context of the current repair movement. As part of this overview, this Article identifies those areas where intellectual property rights could prevent repair laws from being fully realized, even if some of the states pass the legislation, and recommends certain reforms that are necessary to accommodate the need for a right to repair and enable it to take hold.*

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## INTRODUCTION

The consumer technology products business is big. For example, in 2018, the Consumer Technology Association reported that the industry generated \$351 billion in retail revenue.<sup>1</sup> A contributing factor to the size of this industry is that almost all consumer products and equipment include some type of technology in the form of an electronic component or computer chip. Your Keurig coffee maker? It has a computer chip.<sup>2</sup> Your Honda CR-V? It has multiple types of electronics and technology embedded into it.<sup>3</sup> The same holds true in many other areas of consumer products.<sup>4</sup> As a corollary to this, gone are the days when an at-home do-it-yourselfer could unscrew the back of the coffee maker and fix it with a few tools. With embedded computer chips, software, and other technology, specialized knowledge and tools are now needed to make simple repairs. Therefore, it is likely not surprising that

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<sup>1</sup>CTA, BRINGING INNOVATORS TOGETHER: 2018 CORPORATE REPORT, 2-3, *available at* [https://lsc-pagepro.mydigitalpublication.com/publication/?i=495372#{%22issue\\_id%22:495372,%22page%22:0}](https://lsc-pagepro.mydigitalpublication.com/publication/?i=495372#{%22issue_id%22:495372,%22page%22:0}). To put this in perspective, this would account for approximately three percent of the overall retail sales in the U.S., based on 2018 third quarter data. *See U.S. Comm. Dept, U.S. Census Bureau News 1*, Nov. 19, 2018 (stating that the total retail sales for third quarter in 2018 was \$1,340.2 billion), *available at* [https://www.census.gov/retail/mrts/www/data/pdf/ec\\_current.pdf](https://www.census.gov/retail/mrts/www/data/pdf/ec_current.pdf).

<sup>2</sup> Juliana Kenny, *Keurig Under Fire for Use of DRM in New Coffee Makers*, INSIDE COUNSEL (March 4, 2014), <http://www.insidecounsel.com/2014/03/04/keurig-under-fire-for-use-of-drm-in-new-coffee-mak?slreturn=1468607106>.

<sup>3</sup> *See, e.g.*, Jeff Plungis, *Honda Details CR-V Engine Fix But Details Rollout Plans*, CONSUMER REP., Oct. 30, 2018, <https://www.consumerreports.org/car-repair-maintenance/honda-delays-cr-v-turbo-engine-fix-details-rollout-plans/> (detailing the many parts that contain technology). While our discussion in this section focuses on electronics, we will be discussing repair and intellectual property with respect to other goods, like cars, given the importance of the issue. In addition, to a large extent, the same issues can arise with respect to other goods as well.

<sup>4</sup> A note on this Article's use of the term "consumer products" in the context of repair. This Article refers to all forms of consumer goods that includes some form of electronic chip, and therefore cannot be easily repaired. While clearly this category includes the ubiquitous "smart phones" made by Apple and Samsung, these products can also include electric razors made by Wahl, vacuum cleaners made by Dyson, insulin pumps made by Medtronic, or even farm tractors made by John Deere. In addition, some companies, like Amazon, are creating chips that can be inserted into electronic products that did not previously have the capacity to communicate with voice-activated assistants, like Alexa, which will make these products even more technologically complicated. *See* Laura Stevens, *Amazon to Offer Alexa-enabled Chip to Electronics Manufacturers*, MarketWatch.com, WALL ST. J., Sep. 20, 2018, <https://www.marketwatch.com/story/amazon-to-offer-alexa-enabled-chip-to-electronics-manufacturers-2018-09-20> (last visited Oct. 6, 2018).

the repair business is big, too. According to some estimates, the repair business constitutes up to three percent of the U.S. economy.<sup>5</sup>

Unfortunately for consumers, manufacturers have been taking advantage of this product complexity to stymie the do-it-yourselfer and independent repair shops from making repairs in a variety of different ways. First, many manufacturers maintain an “authorized” network of repair shops, which consumers are required to utilize for repairs during a product’s warranty period.<sup>6</sup> This is not, in of itself, a concern. The problem is the difficulty and expense in joining the network.<sup>7</sup> Second, those manufacturers that wish to control repairs through a network (or other exclusive method), obscure repair information and refuse to supply replacement parts on the open market.<sup>8</sup> In addition, these manufacturers utilize intellectual property to further ensure that their control over the repair market for their products is solely within their control. For example, some manufacturers place microscopic trademarks on repair parts in order to maintain control over who is allowed to import such repair parts.<sup>9</sup> While this may be technically allowed under the law, it does not align with the traditionally-accepted purpose for trademark law, which is to assist consumers in locating products they have previously enjoyed.<sup>10</sup> In

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<sup>5</sup> See Kyle Wiens, *Copyright Office Ruling Issues Sweeping Right to Repair Reforms*, IFIXIT.ORG, Oct. 25, 2018, <https://ifixit.org/blog/11951/1201-copyright-final-rule/> (last visited Jan. 9, 2019); Alex Fitzpatrick, *Hand Me That Wrench: Farmers and Apple Fight Over the Toolbox*, TIME, Jun. 22, 2017, <http://time.com/4828099/farmers-and-apple-fight-over-the-toolbox/> (citing that Apple makes approximately \$1 billion to \$2 billion per year in fixing iPhones).

<sup>6</sup> See generally APPLE AUTHORIZED SERVICE PROVIDER PROGRAM, APPLE, <https://support.apple.com/en-hk/aasp-program> (last visited Oct. 6, 2018).

<sup>7</sup> See Jason Koebler, *Do You Know Anything About Apple’s Authorized Service Provider Program?* MOTHERBOARD, (Mar. 16, 2017), [https://motherboard.vice.com/en\\_us/article/ypkqxw/do-you-know-anything-about-apples-authorized-service-provider-program](https://motherboard.vice.com/en_us/article/ypkqxw/do-you-know-anything-about-apples-authorized-service-provider-program).

<sup>8</sup> See ECONOMIST, *If It’s Broken, You Can’t Fix It*, Sep. 30, 2017, <https://www.economist.com/business/2017/09/30/a-right-to-repair-movement-tools-up>.

<sup>9</sup> See Jason Koebler, *DHS Seizes iPhone Screens From Prominent Right to Repair Advocate*, MOTHERBOARD, May 11, 2018, [https://motherboard.vice.com/en\\_us/article/evk4wk/dhs-seizes-iphone-screens-jessa-jones](https://motherboard.vice.com/en_us/article/evk4wk/dhs-seizes-iphone-screens-jessa-jones). For example, Apple routinely places microscopic “Apple” logos on internal iPhone repair parts (parts that consumers do not see because they cannot even open their phones) in order to claim that an independent repairer is “counterfeiting” a refurbished or repaired iPhone. See *id.*

<sup>10</sup> See S. Rep. No. 79-1333, at 1 (1946), as reprinted in 1946 U.S.C.C.A.N. 1274, 1274 (“One [goal] is to protect the public so it may be confident that, in purchasing a product bearing a particular trade-mark which it favorably knows, it will get the product which it asks for and wants to get.”). See also Stacey L. Dogan & Mark A. Lemley, *The Merchandising Right: Fragile Theory or Fait Accompli?*, 54 EMORY L.J. 461, 466–67 (2005); Mark A. Lemley, *The Modern Lanham Act and the Death of*

addition, where consumers or independent vendors have attempted to spread the knowledge of repair by posting manuals, videos or other information online, manufacturers have taken less visible methods to prevent this information dissemination through sending cease-and-desist letters or take down requests.<sup>11</sup> Moreover, some manufacturers have been suing replacement parts manufacturers for patent infringement,<sup>12</sup> or utilizing the services of U.S. Customs and Border Patrol to have the government seize replacement parts at the border under the alleged auspices that they are counterfeit.<sup>13</sup>

To combat the hostage-taking of consumer products, a social movement that has demanded a right to repair has sprung up, and has gained steam in the last five years. The movement has a number of different branches, with one branch focused on pushing a “right to repair” or “fair repair” through state legislatures. Another branch of the movement is focused on amending the Digital Millennium Copyright Act (or the “DMCA”), which has provided much of the legal grounds for manufacturers to block repairs.<sup>14</sup> In the last two years, the movement has seen some success: as of the date of this Article, 18 states have introduced a right to repair legislation.<sup>15</sup> At a meta-level, such legislation would require manufacturers of consumer electronics (defined rather broadly) to enable consumers and independent repair shops to repair

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*Common Sense*, 108 YALE L.J. 1687, 1690 (1999); Glynn S. Lunney, Jr., *Trademark Monopolies*, 48 EMORY L.J. 367, 421, 432 (1999); I.P.L. Png & David Reitman, *Why Are Some Products Branded and Others Not?*, 38 J.L. & ECON. 207, 208–11 (1995); William M. Landes & Richard A. Posner, *The Economics of Trademark Law*, 78 TRADEMARK REP. 267, 271 (1988) (“[A] trademark conveys information that allows the consumer to say to himself, ‘I need not investigate the attributes of the brand I am about to purchase because the trademark is a shorthand way of telling me that the attributes are the same as that of the brand I enjoyed earlier.’”).

<sup>11</sup> Timothy B. Lee, *When Tech Companies Won’t Provide Service Manuals, this Guy Writes His Own*, WASH. POST, The Switch, Jan. 13, 2014, [https://www.washingtonpost.com/news/the-switch/wp/2014/01/13/when-tech-companies-wont-provide-service-manuals-this-guy-writes-his-own/?noredirect=on&utm\\_term=.4303987196ec](https://www.washingtonpost.com/news/the-switch/wp/2014/01/13/when-tech-companies-wont-provide-service-manuals-this-guy-writes-his-own/?noredirect=on&utm_term=.4303987196ec).

<sup>12</sup> See, e.g., *Ford Glob. Techs., LLC v. New World Int’l, Inc.*, No. 3:17-CV-3201-N, 2018 WL 5786157 (N.D. Tex. Nov. 5, 2018) (finding in favor of Ford on summary judgment on grounds of design patent infringement against manufacturer of similar parts). We thank Professor Sarah Burstein for bringing this case to our attention.

<sup>13</sup> See, e.g., Koebler, *supra* note 9.

<sup>14</sup> REPAIR.ORG., IT’S TIME TO FIX THE DMCA, <https://repair.org/copyright/> (last visited Oct. 6, 2018).

<sup>15</sup> Chaim Gartenberg, *California Becomes the 18<sup>th</sup> State to Introduce Right to Repair Bill*, VERGE, Mar. 8, 2018, <https://www.theverge.com/2018/3/8/17097256/california-right-to-repair-bill-apple-microsoft-service-replace-parts> (last visited Oct. 6, 2018).

consumer products.<sup>16</sup> Towards this goal, the legislation would require manufacturers to release information, parts and tools. However, as of the date of this Article, no state has actually voted to enact the legislation. In fact, there are signs that the legislation has stalled in some states.<sup>17</sup> Although there are likely many reasons for this, one major reason may be that the large manufacturers have been lobbying the states to not pass these repair laws.<sup>18</sup> In arguing against the proposed legislation, manufacturers have cited intellectual property rights concerns, as well as safety (personal and cyber), as reasons for states to allow manufacturers to retain control over repairs of their products.

While some state policymakers are skeptical of these arguments, the fact that none of the introduced laws have been enacted seems to indicate that these anti-repair arguments may be finding root. In response, the repair movement continues to stress the importance of enacting a right to repair, while brushing aside, for the most part, any intellectual property concerns.<sup>19</sup> The primary justifications to the legislation offered by the repair movement include environmental concerns, consumer autonomy, and competition.<sup>20</sup> To be sure, the repair movement (notably, the DMCA-focused branch) recognizes that intellectual property rights may be impacted by the right to repair; however, on the whole, the movement does not tie the two worlds together and does not sufficiently address the potential clash between a right to repair and the United States' far-reaching intellectual property rights regime.<sup>21</sup>

While we find the justifications brought by the repair movement to support their proposals convincing, we find that the case for the right to repair can be bolstered even further. This Article demonstrates that even amidst the strong

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<sup>16</sup> See, e.g., REPAIR.ORG, LEGISLATIVE TEMPLATE, at Sec. 3(a), (b), <https://repair.org/s/Right-to-repair-Model-state-law-7-24-18.docx> (last visited Jan. 9, 2019).

<sup>17</sup> See Brian Abel, 'Right to Repair' Bill Stall in MO, KS, KSHB.com, Apr. 25, 2017, <https://www.kshb.com/news/local-news/right-to-repair-bills-stall-in-mo-ks> (last visited Oct. 6, 2018).

<sup>18</sup> See Alex Fitzpatrick, *Hand Me That Wrench: Farmers and Apple Fight Over the Toolbox*, TIME, Jun. 22, 2017, <http://time.com/4828099/farmers-and-apple-fight-over-the-toolbox/> (last visited Oct. 6, 2018).

<sup>19</sup> In fact, the model legislation itself references trade secrets, but no other kind of intellectual property. See REPAIR.ORG, LEGISLATIVE TEMPLATE, *supra* note 16, at Sec. 5.

<sup>20</sup> REPAIR.ORG, ADVOCACY, POLICY OBJECTIVES, <https://repair.org/policy/> (last visited Jan. 9, 2019). See also IFIX.COM, REPAIR MANIFESTO, <https://www.ifixit.com/Manifesto> (last visited Jan. 9, 2019).

<sup>21</sup> See *id.*, ADVOCACY (separating "Fix the DMCA" into a different category from "Policy Objectives").

objections by the manufacturers, an analytical framework that justifies the right to repair in terms that are consistent with intellectual property protection can be offered. We show, first, how seemingly external policy considerations can nevertheless be accounted for, and interwoven into, intellectual property law and policy making. Beyond that, our analysis reveals that the right to repair can be justified by internal justifications—i.e., justifications that are commonly used to support intellectual property protection, including ones rooted in utilitarianism, labor theory, personality theory, and social planning theory. This novel theoretical basis for the right to repair offered can make the case for the right even stronger and help state policymakers to handle the manufacturers' objections on the intellectual property front.

Based on our theoretical discussion of the justifications for the right to repair, we then move on to mapping the various intellectual property rights that could be implicated by a right to repair. Such a broad exploration is necessary to reveal any potential overshadowing of the state legislation efforts by federal intellectual property laws. We visualize the right to repair as concentric circles, beginning at the core with the personal right to repair one's own products, while each circle adds in other elements of the right. After the core, the second circle includes the freedom to engage in other activities that facilitate repairs, including diffusion of repair information and advertising repair businesses. The third circle includes the right to manufacture, import, sell and use replacement parts, and finally, the outer circle includes the right to mandate original manufacturers to disclose repair information and supply replacement parts. In respect to each circle, we explore the rules and doctrines that may impede or preempt any state-based legislation and offer suggestions as to changes, both within the intellectual property area, as well as in the model legislation.<sup>22</sup>

This Article is the first to examine the current repair movement in the context of U.S. intellectual property laws. Other scholarly and policy articles have touched upon the interface between repairs and intellectual property law, but the majority of these pieces have focused on one particular area of intellectual property law, such as patents or copyright.<sup>23</sup> Those few articles that have examined this area from a more general intellectual property viewpoint are currently outdated, given recent developments at the Supreme

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<sup>22</sup> While there are international implications and the right to repair consumer products is global, for the most part, this Article will focus on U.S. law and cases, given the space constraints.

<sup>23</sup> See generally Joshua D. Sarnoff, *White Paper on Protecting the Consumer Patent Law Right to Repair and the Aftermarket for Exterior Motor Vehicle Repair Parts: The PARTS Act, S. 812, H.R. 1879, 115th Congress*, November 2017, available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3082289](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3082289) (focusing on patent law).

Court, and the recent repair movement.<sup>24</sup> Our goal is to take a fresh holistic look at intellectual property and the right to repair, in an attempt to reconcile the two. We believe that intellectual property laws should not inhibit the right to repair from being fully implemented in the U.S.

The remainder of this Article proceeds in four parts. Part I will explore the repair social movement, discuss the causes for the current activism, and analyze the model legislation and the manufacturers' efforts to forestall it. Part II attempts to develop a theoretical basis for the right to repair that justifies it in a manner reconcilable with intellectual property protection. We start by showing that even seemingly external policy considerations supporting repair, like environmental concerns and consumer autonomy, can be accounted for within intellectual property law and balanced against intellectual property rights in a manner that preserves a space for a right to repair. We then move to discuss internal justifications for the right to repair. Our analysis reveals, perhaps counter-intuitively, that a right to repair can be justified under theories that are generally used to justify intellectual property rights, and, to a large extent, is essential for intellectual property law to achieve its prescribed goals—utilitarian and others. Next, Part III undertakes an exploration of various areas of intellectual property law that are implicated by different components of a right to repair. Ultimately, we provide suggestions on where these rules, doctrines, or laws could be reinterpreted, revised or amended in order to enable a full implementation of the right of repair. Finally, Part IV provides responses to some of the counterarguments that are raised in the right to repair debate and that could be used to criticize this Article's thesis, such as a concern regarding the quality of repairs, the fear that requiring manufacturers to provide repair information or replacement parts would increase counterfeiting or theft of intellectual property, as well as the potential economic impact to manufacturers in a more open and competitive repair market. We then briefly conclude.

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<sup>24</sup> See generally Pamela Samuelson, *Freedom to Tinker*, 17 THEORETICAL INQ. LAW 563 (2009); Estelle Derclaye, *Repair and Recycle Between IP Rights: End User License Agreements and Encryption*, in SPARES, REPAIRS AND INTELLECTUAL PROPERTY RIGHTS 21-56 (C. Heath & A. Sanders, eds. 2009). For example, since these articles were written, the Supreme Court decided *Impression Products v. Lexmark Int'l, Inc.*, 137 S. Ct. 1523 (2017), which will be discussed below in Part III.

## I. THE REPAIR SOCIAL MOVEMENT AND THE RIGHT TO REPAIR LEGISLATION

### A. *The Repair Social Movement*

In the last few years, a new consumer rights movement focused on the right to repair consumer products has sprouted up.<sup>25</sup> The main organization behind the repair movement is the Repair Association, which was officially founded in July 2013 as the “Digital Right to Repair Coalition” (later changing its name to “Repair Association”).<sup>26</sup> Its members include industry organizations and companies that have been impacted by the inability to freely repair, reuse, and recycle consumer electronic parts or products.<sup>27</sup> In addition to the larger players behind the Repair Association, though, are individual consumers and consumer-rights groups. These include some unlikely partners, such as farmers. In 2017, the American Farm Bureau Federation, adopted a policy to address the right of farmers to fix their own farm equipment and have taken to lobbying at the federal level for this.<sup>28</sup> Farmer “hacktivists” routinely hack their John Deere agricultural machinery in order to repair their equipment and harvest their crops in a timely fashion.<sup>29</sup>

This repair movement has gained steam in the last three years, at least at the state-level, with their success leading to 18 states (as of the date of this publication) introducing legislation that would guarantee consumers a right to repair their electronic equipment.<sup>30</sup> The Repair Association has lobbied for their model legislation to be the basis for state laws.<sup>31</sup> We will parse through this model legislation in section I.C, below. As will be seen, the main thrust

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<sup>25</sup> This movement is new in its focus on consumer products, although it has its roots in the movement to repair automobiles. In fact, the current social movement references the success of the previous movement as the basis for its current strategy. See REPAIR.ORG, THE REPAIR ASSOCIATION, <https://repair.org> (citing on front page of website that “86% of voters in Massachusetts overrode big car companies and passed the Automobile Owners’ Right to Repair in 2012.”).

<sup>26</sup> REPAIR.ORG, ABOUT US, HISTORY, <https://repair.org/history/> (last visited Oct. 6, 2018).

<sup>27</sup> REPAIR.ORG, ABOUT US, MEMBERS, <https://repair.org/members-1/> (last visited Oct. 6, 2018).

<sup>28</sup> Kaleigh Rogers, MOTHERBOARD: VICE, *The ‘Right to Repair’ Movement is Being Led by Farmers*, Jan. 31, 2017, [https://motherboard.vice.com/en\\_us/article/kgbgz/farmers-right-to-repair](https://motherboard.vice.com/en_us/article/kgbgz/farmers-right-to-repair) (last visited Oct. 6, 2018).

<sup>29</sup> See *id.*

<sup>30</sup> See Gartenberg, *supra* note 15.

<sup>31</sup> REPAIR.ORG, ADVOCACY, LEGISLATION, <https://repair.org/legislation/> (last visited Oct. 6, 2018).

of the model legislation is to require manufacturers of consumer electronic equipment to provide tools and parts in order to repair devices.<sup>32</sup>

The movement is inspired, at least to a certain extent, by the successful campaign that led to the passage of the right to repair automobiles law in Massachusetts in 2012. After Massachusetts passed this law, a few other states followed, which led to the automobile industry voluntarily agreeing to work with independent car repair shops nationwide.<sup>33</sup> While this voluntary agreement has been successful in providing independent repair shops with the ability to repair cars, even this has been eroded over the years since, due to tactics by car manufacturers.<sup>34</sup> These tactics are similar to those of consumer technology companies, as cars become more and more dependent on software and electronic components.<sup>35</sup>

To this date, none of the 18 states have actually passed their pending laws, and some news outlets report that the movement has stalled in the legislatures.<sup>36</sup> The reports point to the behind-the-scenes lobbying by the major manufacturers who would be the ones forced to provide consumers with repair tools, parts and information under the legislation.<sup>37</sup> Companies, such as Apple, Samsung, Dyson, Wahl, and LG have privately lobbied at the state and federal level in an attempt to prevent such legislation from being passed.<sup>38</sup> These companies utilize different arguments, ranging from personal injuries caused by incorrect repairs to intellectual property rights

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<sup>32</sup> REPAIR.ORG, LEGISLATIVE TEMPLATE, *supra* note 16.

<sup>33</sup> See ECONOMIST, *supra* note 8 (“The hope is that once an important state passes such a law, the country will follow—as was the case in the car industry after Massachusetts in 2012 passed a right-to-repair law for cars that led to a national memorandum of understanding between carmakers and repair shops.”).

<sup>34</sup> See, e.g., Matt Murphy, *Bill Filed to Prevent Skirting Right-to-Repair Law*, METROWEST DAILY NEWS, Sep. 18, 2018, <https://www.metrowestdailynews.com/news/20180918/bill-filed-to-prevent-skirting-right-to-repair-law> (citing to a new bill introduced in the Massachusetts State Legislature to prevent car manufacturers from evading the automotive right to repair law through increased use of wireless technology).

<sup>35</sup> Unfortunately, the current repair movement exempts automobiles from its scope.

<sup>36</sup> See Abel, *supra* note 17.

<sup>37</sup> Jason Koebler, *Appliance Companies are Lobbying to Protect Their DRM-Fueled Repair Monopolies*, MOTHERBOARD: VICE, Apr. 25, 2018, 9:00am, [https://motherboard.vice.com/en\\_us/article/vbvk3b/appliance-companies-are-lobbying-against-right-to-repair](https://motherboard.vice.com/en_us/article/vbvk3b/appliance-companies-are-lobbying-against-right-to-repair) (last visited Oct. 6, 2018).

<sup>38</sup> Not all companies are anti-repair. For example, Motorola and iFixit, a prominent repair organization, announced a partnership in 2018. Elise Barsch, *iFixit and Motorola—A Match Made in Mobile*, IFIXIT.ORG, Oct. 22, 2018, <https://ifixit.org/blog/11644/motorola-ifixit-partnership/>.

concerns.<sup>39</sup> In response, the repair movement has justified the legislation with a variety of different arguments, including environmental, competition, and consumer autonomy concerns.<sup>40</sup> As will be discussed below, these justifications from both sides appear to be at cross-purposes, which may account for the lack of state enactment of the pending laws. Before reaching this discussion, a dive into the reasons behind the current social movement is critical to understanding the justifications motivating the movement.

### B. Why Now?

Large manufacturers fighting against the ability of consumers to control (and repair) their consumable products is not a new phenomenon. To illustrate, in 1956, after being accused of unfair practices that violated antitrust laws, IBM entered into a consent decree with the Department of Justice that required that IBM undertake actions that would allow consumers the ability to repair their own machine, or at least choose who undertakes the repair.<sup>41</sup>

Given this, the question becomes, why has the repair movement taken off in such a big way over the last five years? There are a lot of different answers to this, but one of the main answers is that almost every consumer product nowadays has some type of electronic chip or other technology embedded into it.<sup>42</sup> Concomitantly with the “technologization” of consumer products,

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<sup>39</sup> Letter to The Honorable David Harris, Illinois General Assembly, from Rick Habben, Wahl Clipper Corporation, Apr. 17, 2018, <https://www.documentcloud.org/documents/4446374-Wahl-Opposition-Illinois.html>; Letter to The Honorable David Harris, Illinois General Assembly, from Jason L. Brown, Dyson, Inc., Apr. 17, 2018, <https://www.documentcloud.org/documents/4446373-DYSON-Illinois-Opposition.html>; Letter to The Honorable David Harris, Illinois General Assembly, from John I. Taylor, LG Electronics USA, Apr. 18, 2018, <https://www.documentcloud.org/documents/4446375-LG-LETTER-HB-4747-2.html>. Although these manufacturers may have their intellectual property rights registered in these other countries, like in China, the concern is that their intellectual property would be more easily accessible by counterfeiters and pirates. These concerns are addressed below in Part IV, *infra*.

<sup>40</sup> See *supra* note 20 and accompanying text.

<sup>41</sup> U.S. v. IBM, Civil Action No. 72-344, S.D.N.Y., Jan. 25, 1956, reported in 1956 Trade Cases, *available at* <http://www.cptech.org/at/ibm/ibm1956cd.html> (“IV. (c) to offer to sell at reasonable and nondiscriminatory prices and terms, to owners of IBM tabulating or electronic data processing machines (whether or not the purchaser receives IBM repair and maintenance service) and to persons engaged in the business of maintaining and repairing such machines and during the period when IBM has such parts and subassemblies available for use in its leased machines, repair and replacement parts and subassemblies for any tabulating machines or electronic data processing machines manufactured by IBM.”).

<sup>42</sup> See *supra* note 4 and accompanying text.

manufacturers of these products began to claim that only authorized repair personnel (or the manufacturers themselves) are qualified to repair such products. Indeed, manufacturers have attempted to control repairs by refusing to release repair manuals, refusing to make repair parts available to independent repair shops and consumers, and strictly enforcing authorized repair networks. All of this has led to the inability to easily obtain inexpensive and accessible repairs, which serve to channel consumers into throwing away their broken products and needing to buy new ones.<sup>43</sup>

In addition to tight controls on authorized repairs, manufacturers have been actively fighting against repairs at other levels, including abusing their intellectual property rights to block repair-related activities. Among other things, they have brought actions against small independent repair shops in the United States and abroad.<sup>44</sup> Many of these actions are extra-judicial, meaning that they often do not enter into litigation because these small repair shops simply settle prior to a lawsuit being filed. However, the few cases that make their way to the courts every now and then help shed light into the lengths to which manufacturers will go in order to control repairs.

Apple's tactics in a recent case in Norway exemplifies the likely strategy taken by other manufacturers abroad and in the United States.<sup>45</sup> Apple sued Henrik Huseby, the owner of a small Norwegian repair shop, on grounds of trademark infringement, after Huseby attempted to import 63 refurbished iPhone screens and refused to enter into a settlement agreement that would have required him to pay approximately \$3,400.<sup>46</sup> Most small repair shops are unable to finance litigation,<sup>47</sup> and so it is likely that many would pay the \$3,400, if they were able to do so, just to make Apple go away, like Apple's lawyer promised Huseby.<sup>48</sup>

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<sup>43</sup> See, e.g., *Press Release, Eggman Introduces Legislation to Create a "Right to Repair" for Electronics*, Mar. 7, 2018, <https://a13.asmdc.org/press-releases/20180307-eggman-introduces-legislation-create-right-repair-electronics>.

<sup>44</sup> See Koebler, *supra* note 9.

<sup>45</sup> See Jason Koebler, *Apple Sued an Independent iPhone Repair Shop Owner and Lost, Motherboard Vice*, Apr. 13, 2018, [https://motherboard.vice.com/en\\_us/article/a3yadk/apple-sued-an-independent-iphone-repair-shop-owner-and-lost](https://motherboard.vice.com/en_us/article/a3yadk/apple-sued-an-independent-iphone-repair-shop-owner-and-lost) [hereinafter Koebler, *Apple Sued*] (last visited Oct. 6, 2018). Similar claims have been made by Apple in the United States - <https://www.techdirt.com/articles/20130429/07214322874/homeland-security-participates-trademark-raid.shtml>.

<sup>46</sup> See Koebler, *Apple Sued*, *supra* note 45.

<sup>47</sup> See Leah Chan Grinvald, *Charitable Trademarks*, 50 AKRON L. REV. 817, 832-36 (2017). In addition, such litigation is expensive, time-consuming, and emotionally draining for small business owners.

<sup>48</sup> See Koebler, *Apple Sued*, *supra* note 45.

Unfortunately, though, if small repair shops do enter into such agreements and pay the demand fees, they would also be agreeing to cease their business, if the settlement agreement offered by Apple requires (like it did in Huseby's case) that the small repair shop promises not to "manufacture, import, sell, market, or otherwise deal with any products that infringe Apple's trademarks."<sup>49</sup> An additional element in this case, and in many cases similar to this, is that Apple claims that the refurbished parts were counterfeits, even though in Huseby's case, the Apple logo was covered up on the parts and Huseby never removed the marker that made the logo invisible. While different countries have different trademark laws, a refurbished part or product (meaning one that was previously sold, broken, and then repaired by a third party) is not considered a counterfeit in the United States. However, the fact that many manufacturers claim that the repair shops are "counterfeiting" or selling counterfeits of the real product exposes the repair shop proprietors to criminal action.<sup>50</sup>

This strategy is not limited to trademarks. Manufacturers have routinely utilized other intellectual property rights to control their products and prevent their allegedly unauthorized repairs.<sup>51</sup> To illustrate, Ford sued the marketer and distributor of Mustang and F-150 car replacement parts for design patent infringement.<sup>52</sup> As will be further discussed in Part III below, car manufacturers have been obtaining design patents on replacement parts in an effort to control repairs by independent repair shops or do-it-yourselfers.<sup>53</sup> With a patented replacement part, only Ford is allowed to "making, using, selling, or importing" such part.<sup>54</sup> This strategy works, as Ford was granted summary judgment on its infringement claims.<sup>55</sup> Without widely available replacement parts, Ford retains the sole control over the availability and pricing of such parts. This likely results in consumers being forced to have

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<sup>49</sup> See Koebler, *Apple Sued*, *supra* note 45 (showing settlement agreement).

<sup>50</sup> Manufacturing counterfeit products or selling counterfeit products is a crime in the United States and in all countries that are signatories to the Agreement on Trade Related Aspects of Intellectual Property (or "TRIPS"). See TRIPS, Art. 61; 18 U.S.C. § 2320(a).

<sup>51</sup> For other examples, see *supra* notes 9-13 and accompanying text.

<sup>52</sup> See Ford Glob. Techs, *supra* note 12. Ford was later awarded damages in a subsequent proceeding. See *Ford Global Technologies, LLC. v. New World International, Inc.: Brooks Kushman Obtains Willful Infringement on 13 Design Patents on Behalf of Ford Motor Company*, BROOKS KUSHMAN: CASE STUDIES, Dec. 5, 2018, <https://www.brookskushman.com/case-studies/case-studies/ford-global-technologies-llc-v-new-world-international-inc/>.

<sup>53</sup> See Part III *infra*. See also Sarnoff, *supra* note 23.

<sup>54</sup> 35 U.S.C. § 271(a).

<sup>55</sup> See *supra* note 12 and accompanying text.

their cars repaired at authorized repair shops or raises the cost of such repairs if parts are made available at independent repair shops.

In sum, a number of different, but related factors, has contributed to the rise of the current repair movement: the purposeful sabotaging of the ability to repair through withholding of information and parts, the increasing expense paid to fix one's product through authorized channels, as well as the use by manufacturers of their intellectual property rights to suppress repairs. As a response to these factors and the ever-increasing difficulty in obtaining repairs, the repair movement has fought back and lobbied state legislators over the past few years in order to get legislation passed that would provide for a "right to repair."

### C. Legislation

As of the date of this Article, 18 different state legislatures have had legislation introduced that would provide a "right to repair" electronic products. These states span the United States: from Hawaii, to Washington, to the New England area, including Massachusetts, New Hampshire, and Vermont.<sup>56</sup> The legislation introduced in many of these state legislatures are based in large part (or in whole, in some instances) on the model legislation proposed by the Repair Association.<sup>57</sup> Although a few state legislatures have edited the model legislation to fit certain needs of that particular state—for example, California's introduced law is proposed to be part of the previously enacted Electronic Waste Recycling Act—the core provisions of the model legislation have typically been preserved. Therefore, we will focus our attention in this section on these core provisions.

#### (1) The Model Legislation

There are four main parts to the model legislation: (1) mandating disclosure of information that will allow repairs; (2) mandating the availability of parts and tools to facilitate repairs; (3) mandating disclosure of information to allow security protections to be reset; and (4) forbidding any contracting-around of such provisions in terms between authorized repair providers and the original equipment manufacturers. Before each of these provisions are discussed, some of the definitions in the legislation should be flushed out first.

##### (a) Definitions and Scope

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<sup>56</sup> The 18 states include: California, Hawaii, Iowa, Illinois, Kansas, Massachusetts, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, Oklahoma, Tennessee, Vermont, Washington, and Wyoming. See Gartenberg, *supra* note 15.

<sup>57</sup> See REPAIR.ORG, LEGISLATIVE TEMPLATE, *supra* note 16.

The scope of the model law is intended to be broad and the reach of the act is to all “digital electronic equipment,” which is defined as “any product that depends for its functioning, in whole or in part, on digital electronics embedded in or attached to the product.”<sup>58</sup> This definition encompasses pretty much every type of product that we use in our daily lives, ranging from our coffee machines to robotic cleaning equipment to our cars. However, the model legislation (as do many of the state versions) excludes from its ambit “motor vehicles.” In turn, the definition of “motor vehicle” includes those types of vehicles that transport “persons or property on a street or highway,” but does not include a motorcycle or a motor home (either an RV or other type of motor home).<sup>59</sup> As some states have repair laws that deal specifically with motor vehicles and the car industry has a nationwide “memorandum of understanding” that deal with similar aspects, this exclusion seemingly makes sense.<sup>60</sup> Unfortunately, as noted above, some motor vehicle manufacturers are finding ways around the laws and the industry’s voluntary agreement to provide parts to independent repair shops, and as such, may not warrant exclusion.<sup>61</sup>

An additional definition that broadens the scope of the model legislation is the definition of “owner.” The model law defines “owner” to be anyone who purchased or uses through a lease the digital electronic equipment. This is an important definition because one of the ways in which some manufacturers have been trying to limit the ability to repair is through clauses in lease contracts with lessees of equipment.

#### (b) Mandating Disclosure of Information

Section 3(a) of the model legislation requires that original equipment manufacturers disclose “documentation” that is required to diagnose, maintain, or repair digital electronic equipment. The mandated disclosure can be to either independent repair providers (defined as those who do not have any relationship with the manufacturer) or to owners of digital electronic equipment. This documentation is further defined as “any manual, diagram,

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<sup>58</sup> REPAIR.ORG, LEGISLATIVE TEMPLATE, *supra* note 16, at Sec. 2(b).

<sup>59</sup> *Id.* at Secs. 2(h) and 6.

<sup>60</sup> See Memorandum of Understanding, dated Jan. 15, 2014, by and among Automotive Aftermarket Industry Association, Coalition for Auto Repair Equality, Alliance of Automobile Manufacturers and Association of Global Automakers, *available* [at http://www.nastf.org/files/public/OtherReference/MOU\\_SIGNED\\_1\\_15\\_14.pdf](http://www.nastf.org/files/public/OtherReference/MOU_SIGNED_1_15_14.pdf).

<sup>61</sup> See Murphy, *supra* note 34 (describing ways in which the car industry is seemingly working its way around such agreement and the Massachusetts repair law).

reporting output, service code description, schematic diagram, or similar kinds of information ... .”<sup>62</sup>

The idea behind this requirement is that it can be quite difficult to obtain these types of information even through reverse engineering of the product.<sup>63</sup> Kyle Wiens, the chief executive officer of iFixit, a repair-related company, has made it a mission to do so and publishes the results of the reverse engineering in videos called “teardowns.” Not many independent repair shops or owners have the time or know-how to spend hours in doing what the multitude of engineer-contributors at iFixit do on a daily basis.<sup>64</sup> Without this information, however, diagnosing, maintaining and repairing one’s electronic equipment is impossible. Therefore, mandating such disclosure will facilitate more independent repairs.

(c) Mandating the availability of parts and tools to facilitate repairs

Another aspect that stymies repair of digital electronic equipment is the unavailability of tools and parts needed to undertake such repair. Even if a highly motivated owner of such equipment could figure out how to repair her broken phone, it is unlikely that she would be able to do so with standard home repair tools. This is because the parts to some digital equipment are either too miniscule to manage with regular tools or because they are simply not available for purchase.<sup>65</sup> One of the more innovative aspects of iFixit is that it realized early in its lifecycle that there was a market for tools that could assist in repairing electronic equipment.<sup>66</sup> It now not only provides the information for repairing products, but it also provides the means to do so through sales of their specialized repair equipment. Replacement parts, however, are a little trickier because their making, sale and use may infringe intellectual property rights.<sup>67</sup> Considering this, a requirement to make replacement parts available is necessary to facilitate repairs.

(d) Mandating disclosure of information to allow security protections to be reset

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<sup>62</sup> REPAIR.ORG, LEGISLATIVE TEMPLATE, *supra* note 16, at Sec. 2(c).

<sup>63</sup> See Kyle Wiens, *Using Copyright to Keep Repair Manuals Secret Undermines Circular Economy*, GUARDIAN, Dec. 20, 2013, <https://www.theguardian.com/sustainable-business/copyright-law-repair-manuals-circular-economy>.

<sup>64</sup> IFIXIT.COM, ABOUT, <https://www.ifixit.com/Info> (view statistics at bottom of page).

<sup>65</sup> See ECONOMIST, *supra* note 8

<sup>66</sup> See David Whitford, *Meet the \$21 Million Company That Thinks a New iPhone is a Waste of Money*, INC, April 2017, <https://www.inc.com/magazine/201704/david-whitford/ifixit-repair-men.html>.

<sup>67</sup> See discussion *infra* Part III.

Given that almost all, if not all, digital electronic equipment works on some type of software, another problem for repairers has been when manufacturers have included security locks on such software. These “electronic security locks” are intended to prevent third parties from accessing the software and are legally allowed by manufacturers to have under the DMCA’s Section 1201. While these locks are typically vulnerable to hacking around by those with enough know-how, and hacking is widespread, Section 1201 further makes it illegal to hack and disseminate the knowledge of how to hack around software security protections.<sup>68</sup>

Yet, even if hacking is successful, being able to use the device once the repair is made is not guaranteed, as some manufacturers require the device to confirm the repair was authorized before the software will start again.<sup>69</sup> While exemptions to Section 1201, to the extent available, allow hacking for purposes of repair, these exemptions do not impact manufacturers’ attempts to forestall the hack after the repairs are made.<sup>70</sup> A requirement that manufacturers provide the information necessary to reset the lock will be more and more imperative as manufacturers move in a direction that attempts to prevent independent repairs.

(e) Limiting terms to avoid contracting-around of repair law

Finally, the model legislation seeks to ensure that manufacturers are not attempting to contract-around the provisions of the law by including terms in their agreements with their authorized repair providers that would “purport[] to waive, avoid, restrict, or limit an original equipment manufacturer’s obligation to comply with this Act... .”<sup>71</sup> If the original equipment manufacturer attempted to do so, such provision would be “void and unenforceable.”<sup>72</sup>

As noted above, manufacturers have typically controlled who can undertake repairs of their products by maintaining an authorized network of repair vendors. The relationship between the manufacturer and authorized repair vendor is a contractual one, and for the most part, assuming that the manufacturer has the negotiating leverage, the manufacturer can put in its

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<sup>68</sup> 17 U.S.C. §1201.

<sup>69</sup> See Jason Koebler, *In Groundbreaking Decision, Feds Say Hacking DRM to Fix Your Electronics Is Legal*, MOTHERBOARD: VICE (Oct. 25, 2018) [https://motherboard.vice.com/en\\_us/article/xw9bwd/1201-exemptions-right-to-repair](https://motherboard.vice.com/en_us/article/xw9bwd/1201-exemptions-right-to-repair) (describing Apple’s MacBook Pros).

<sup>70</sup> For example, Apple has begun to require that even after a device is reset and repaired, that the device connect with Apple servers to check that the repair was done by an authorized vendor. See *id.*

<sup>71</sup> REPAIR.ORG, LEGISLATIVE TEMPLATE, *supra* note 16, at Sec.5(b).

<sup>72</sup> *Id.*

agreement whatever terms it thinks are necessary. The proposed provision is designed to limit this freedom to contract in this context. If manufacturers were able to contract-around the provisions provided for in the repair law, they could put authorized repair providers at a serious disadvantage vis a vis other independent repair vendors.

However, this provision is not as broad as it needs to be, as it does not limit what manufacturers can place in their sales contracts with their consumers. Manufacturers have already been including limiting provisions into terms with purchasers or lessees of their equipment. As will be discussed in Part III below, this is an area that is squarely in the right of the state legislatures to address, since contract law is state-based. States can declare void any provisions that would purport to limit warranties based on where or how the consumer repaired her product. If these types of provisions were included in any enacted state-based repair law, this would go a long way to making a right to repair a reality.

## (2) Why is the Legislation Stalled?

Given how large the repair business is for manufacturers, it is not surprising that manufacturers would be upset by any attempt to interfere with their ability to control the repair market. Some larger manufacturers have been active in attempting to forestall the passage of any right to repair law.<sup>73</sup> In Illinois, for example, the Association of Home Appliance Manufacturers rallied Dyson, Wahl and LG to send similar letters to seven Illinois state house representatives, including the representative who introduced the legislation and the speaker of the House.<sup>74</sup> As mentioned above, these letters cite a number of different reasons as to why the proposed fair repair law is unwise to enact, including consumer safety, cyber security, and intellectual property.<sup>75</sup> Facially, these letters are quite persuasive, particularly in their lead arguments regarding consumer and product safety. Given that the legislation is framed as a type of consumer protection law, this may seem to make sense.<sup>76</sup>

In response to the arguments from manufacturers, members of the repair movement cite to consumer autonomy and environmental concerns as rebuttals. With respect to consumer autonomy, the main argument is that a

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<sup>73</sup> See Jason Koebler, Appliance Companies Are Lobbying to Protect Their DRM-Fueled Repair Monopolies, Motherboard: Vice (Apr. 25, 2018), [https://motherboard.vice.com/en\\_us/article/vbvk3b/appliance-companies-are-lobbying-against-right-to-repair](https://motherboard.vice.com/en_us/article/vbvk3b/appliance-companies-are-lobbying-against-right-to-repair).

<sup>74</sup> See *supra* note 39 (letters to legislators from manufacturers).

<sup>75</sup> *Id.*

<sup>76</sup> Yet, see *infra* Part IV, where we present our counter-arguments.

consumer should have the ability to do what they want with their product after purchase.<sup>77</sup> As to the substantial e-waste created by products that cannot be repaired, the Public Interest Research Group, for instance, cited that “New Hampshire throws away 1,500 cell phones every day, and 92 percent end up in [the] waste stream ... .”<sup>78</sup>

While these arguments of the repair movement have merit, and the movement has also offered good arguments in an attempt to rebut many of the concerns expressed by manufacturers, including the ones regarding consumer safety and cyber security, these rebuttals have not been successful.<sup>79</sup> In fact, in 2018, none of the 18 states that had pending repair laws actually passed their bills. There are signs that the fight for the right to repair is not over, as some state lawmakers have already announced plans to reintroduce failed bills in 2019.<sup>80</sup> In addition, the U.S. Copyright Office’s exemptions for 2019-2021, which will be discussed below, also provide some promise.<sup>81</sup> In any event, it seems that the state legislation could use some steam. The way the repair movement has dealt with the manufacturers’ arguments on the intellectual property front, in particular, may have not been satisfactory to encourage state policy makers to proceed with the legislation amidst the strong manufacturers’ objections on this front. Yet, paying due attention to intellectual property law is important for another reason, explored in the next section.

### (3) Can State-Based Legislation be Effectively Implemented?

Even if the state laws pass, there is a good possibility that they could not be effectively implemented. The legislation as currently written is framed in consumer protection terms, and on its face, does not seemingly interface with federal intellectual property law.<sup>82</sup>

Unfortunately, though, as detailed in Part III below, the repair model legislation does implicate copyright and patent laws, both of which are in the exclusive jurisdiction of the federal government. The Supremacy Clause of the Constitution prohibits states from passing laws that are in the exclusive

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<sup>77</sup> See, e.g., Bob Sanders, *Heavy Debate Ensues Over ‘Right To Repair’ Bill*, Feb. 13, 2018, NH BUSINESS REVIEW, <https://www.nhbr.com/March-2-2018/Heavy-debate-ensues-over-right-to-repair-bill/> (quoting Brian Clark ).

<sup>78</sup> *Id.* (quoting Nathan Proctor, the director of PIRG’s right to repair campaign). As a counter to this, the manufacturers have argued that their proprietary software is intended to prevent against overrides that could delete features of products that are intended to be environmentally-friendly. See *id.*

<sup>79</sup> See Abel, *supra* note 17.

<sup>80</sup> See Sanders, *supra* note 77.

<sup>81</sup> See *infra* Part III.

<sup>82</sup> For an exception, see the discussion of trade secrets, *infra* Part III.

domain of the federal government.<sup>83</sup> State laws that attempt to bypass federal law can be deemed to be “preempted,” by the federal law, which renders the state law unconstitutional.<sup>84</sup> And in particular, with respect to patent laws and state-based actions that seek to hold a patent owner liable, the Federal Circuit has placed a heavy burden on the plaintiff to prevail on a non-preemption argument.<sup>85</sup> This may mean that state laws based on the model legislation, if enacted, could be subject to a constitutional challenge in their implementation and enforcement.<sup>86</sup> We will address specific areas of concern in Part III and provide suggestions as to how to avoid preemption arguments, as well as other arguments based on intellectual property laws that could be used to try to avoid effective implementation of a right to repair law. Before we do this, however, we turn first to our attempt at developing a cohesive theoretical framework for justifying the right to repair. Such a framework could help bolstering the case for the passage of state right to repair laws while also serve as a basis for any recommendations to revise federal intellectual property law as may be needed to avoid preemption or otherwise enable repair legislation to be effectively implemented.

## II. NORMATIVE JUSTIFICATIONS FOR A RIGHT TO REPAIR

As noted above, the organizations leading the right to repair movement have raised multiple justifications for embracing such a right, ranging from environmental concerns to arguments rooted in consumer autonomy, and

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<sup>83</sup> U.S. Const. art. VI, cl. 2 (“This Constitution, and the Laws of the United States which shall be made in Pursuance thereof . . . shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.”). For a richer discussion of preemption and intellectual property laws, see generally Paul R. Gugliuzza, *Patent Trolls and Preemption*, 101 VA. L. REV. 1579 (2015); Jeanne C. Fromer, *The Intellectual Property Clause’s Preemptive Effect*, in INTELLECTUAL PROPERTY AND THE COMMON LAW 265 (Shyamkrishna Balganesh ed., 2013); Mark A. Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 CALIF. L. REV. 111 (1999); Maureen A. O’Rourke, *Drawing the Boundary Between Copyright and Contract: Copyright Preemption of Software License Terms*, 45 DUKE L.J. 479 (1995); Joan E. Schaffner, *Patent Preemption Unlocked*, 1995 WIS. L. REV. 1081; Dan L. Burk, *Protection of Trade Secrets in Outer Space Activity: A Study in Federal Preemption*, 23 SETON HALL L. REV. 560 (1993); Paul Heald, *Federal Intellectual Property Law and the Economics of Preemption*, 76 IOWA L. REV. 959 (1991).

<sup>84</sup> See, e.g., *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141 (1989).

<sup>85</sup> See *In re Innovatio IP Ventures, LLC Patent Litig.*, 921 F. Supp. 2d 903, 920–21 (N.D. Ill. 2013).

<sup>86</sup> See, e.g., Gugliuzza, *supra* note 83 (referencing the challenges to state anti-troll patent laws).

competition.<sup>87</sup> Yet, some manufacturers have raised counter-arguments, based to a certain extent on their intellectual property rights.<sup>88</sup> As noted above, the response of the repair advocates to such arguments has largely remained on a separate normative level and has not tackled the objections on the intellectual property front in a direct manner. All in all, the right to repair movement may have failed to present a strong enough normative basis to rebut opponents' claims that the proposed legislation could negatively impact their federal intellectual property rights.

In this Part, we present an analytical framework that enables justifying the right to repair in terms that are more reconcilable with intellectual property protection. We believe that reframing and bolstering the arguments for a right to repair in the manner proposed herein is likely to reinforce the case for a right-to repair, enable a more meaningful discussion regarding the potential ways of balancing the various considerations at stake, and ultimately increase the chances of enacting and implementing an effective right to repair legislation.

### A. *External Justifications*

As a starting point, it is important to recall that intellectual property protection is not absolute. The law recognizes that intellectual property rights may entail significant costs and come at the expense of other valuable social interests. In response, the law is often designed in a manner that attempts to balance between the benefits of intellectual property rights and such other, external interests that could be negatively impacted if those rights were too strong.<sup>89</sup> Each branch of law that deals with a certain type of intellectual property rights has various balancing mechanisms that aim to achieve such a balance. For instance, the fair use doctrine in copyright law is often perceived as a mechanism for balancing between copyright and the need to protect free speech.<sup>90</sup> As another example, section 287(c) of the Patent Act prevents

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<sup>87</sup> See *supra* note 20 and accompanying text; *supra* notes 77-78 and accompanying text.

<sup>88</sup> See, e.g., John Deere Letter, [https://www.scribd.com/document/339340098/John-Deere-letter#from\\_embed?campaign=SkimbitLtd&ad\\_group=74968X1525083Xed7fa87e1347edf165b8db797eda4ba8&keyword=660149026&source=hp\\_affiliate&medium=affiliate](https://www.scribd.com/document/339340098/John-Deere-letter#from_embed?campaign=SkimbitLtd&ad_group=74968X1525083Xed7fa87e1347edf165b8db797eda4ba8&keyword=660149026&source=hp_affiliate&medium=affiliate)

<sup>89</sup> Cf. Niva Elkin-Koren, *Copyright in a Digital Ecosystem: A User-Rights Approach*, in *COPYRIGHT LAW IN AN AGE OF LIMITATIONS AND EXCEPTIONS* 132, 141 (Ruth Okediji ed., 2017) (explaining that copyright limitations and exceptions are often conceived as necessary to “balance author rights against a public interest”).

<sup>90</sup> See, e.g., Lee Ann W. Lockridge, *The Myth of Copyright's Fair Use Doctrine as a Protector of Free Speech*, 24 SANTA CLARA COMPUTER & HIGH TECH. L.J. 31 (2007)

patent owners from suing doctors for infringing medical procedure patents.<sup>91</sup> This provision, which significantly limits the effectiveness of such patents, is commonly justified by the fundamental need to provide patients with access to medical treatment.<sup>92</sup>

Therefore, even to the extent that the social interests underlying the right to repair are external to the values underlying intellectual property rights, this does not mean that these interests cannot be accorded significant weight in intellectual property policy making. Notably, the general values and interests highlighted by the repair movement in support of the proposed legislation—including static efficiency considerations (competition in repair markets), environmental concerns, and consumers' rights in their products—are already accommodated in various contexts within intellectual property law's embedded balancing mechanisms.<sup>93</sup> In fact, the right to repair itself has been recognized to some extent as an interest worthy of consideration within various intellectual property law rules and doctrines.<sup>94</sup> Part III will explore these areas of the law and examine the need to supplement existing rules and doctrines with additional mechanisms to protect and enable a meaningful right to repair.

In any event, for the purposes of this Part's theoretical analysis, the important notion is that just because a certain value or social interest is external to the logic and nature of intellectual property rights, this does not mean that such value or interest is irrelevant. Nor, for that matter, is it that such interests

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(providing a critical analysis of the role that the fair use defense purportedly plays as a safeguard for protected speech).

<sup>91</sup> 35 U.S.C. § 287(c).

<sup>92</sup> For a critical discussion of this provision, see generally Cynthia M. Ho, *Patents, Patients, and Public Policy: An Incomplete Intersection at 35 U.S.C. § 287(c)*, 35 U.C. DAVIS L. REV. 601 (2000).

<sup>93</sup> Static efficiency considerations are reflected in intellectual property law in various ways—including, for instance, by limiting the period of exclusivity under various intellectual property regimes, in order to restore competition in the market once it expires. Environmental concerns are reflected, for instance, in the implementation of measures by various patent offices around the world to fast-track green patent applications. See, e.g., Antoine Dechezleprêtre & Eric Lane, *Fast-Tracking Green Patent Applications*, WIPO MAG. (June 2013), <https://perma.cc/5894-AAZY> (providing analysis of such programs). In addition, the Clean Air Act employs a compulsory licenses scheme for patented inventions relating to devices for reducing air pollution. 42 U.S.C. § 7608 (2006). Finally, the need to accommodate consumers' rights in their products is reflected, for instance, in the patent exhaustion doctrine. See, e.g., Amelia Smith Rinehart, *Contracting Patents: A Modern Patent Exhaustion Doctrine*, 23 HARV. J.L. & TECH. 484, 492 (2010) (noting that “enforcement of . . . resale or use restrictions would create an obstacle to the free use and alienability of personal property.”).

<sup>94</sup> See *infra* Part III.

must always be an after-thought to the protection of intellectual property rights. This understanding itself may be helpful in strengthening the case for a right-to-repair against the objections raised on the intellectual property front.

Yet, we think that it is possible to go one step beyond. In the remainder of this Part we will demonstrate that a right-to-repair can be justified from an internal perspective as well. Though this may seem counter-intuitive at first, the right to repair can be justified by the very same rationales that have been used traditionally to justify intellectual property rights.<sup>95</sup> This understanding makes the case for carving a space for a right to repair within intellectual property law even more compelling.

### *B. Internal Justifications*

Many theories have been formulated over the years to justify intellectual property protection.<sup>96</sup> The discussion in this section will focus primarily on the utilitarian theory—the most popular account of intellectual property rights, pursuant to which the law should be designed to maximize net social welfare.<sup>97</sup> As explored below, we believe that a strong case for a right-to-repair can be made under this approach. Conducting the theoretical analysis under the lens of the utilitarian theory of intellectual property may be particularly beneficial in this context, in enabling the repair movement to respond to the arguments raised by opponents of the state legislation on the same normative level. Nevertheless, despite the centrality of the utilitarian argument to this Article’s thesis, we will also briefly discuss the possibility of justifying the right to repair under other main theories commonly used in discussions of intellectual property law: the labor theory, the personality theory, and social planning theory.<sup>98</sup>

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<sup>95</sup> Cf. Guy Pessach, *Toward a New Jurisprudence of Copyright Exemptions*, 55 IDEA 287, 293 (2015) (suggesting that “the justifications for structuring copyright’s exemptions as exclusion rights mirror economic justifications for copyright protection”).

<sup>96</sup> See generally William Fisher, *Theories of Intellectual Property*, in NEW ESSAYS IN THE LEGAL AND POLITICAL THEORY OF PROPERTY 168 (ed. Stephen R. Munzer, 2001).

<sup>97</sup> See, e.g., *id.* at 1; Gaia Bernstein, *In the Shadow of Innovation*, 31 CARDOZO L. REV. 2257, 2275 (2010) (noting the scholarly convention that the utilitarian theory is the prominent justification for intellectual property rights in the United States).

<sup>98</sup> By choosing to focus on the utilitarian approach, for the reasons explored above, we do not mean to imply that utilitarianism is a satisfactory account of intellectual property law, neither descriptively nor normatively. In fact, both authors have expressed in various contexts criticism of the utilitarian account of intellectual property. See, e.g., Leah Chan Grinvald, *Making Much Ado About Theory: The Chinese Trademark Law*, 15 MICH. TELECOMM. TECH. L. REV. 53 (2008); Ofer Tur-

## (1) Utilitarianism

The primary utilitarian justification for the patent and copyright systems focuses on their role in promoting progress by incentivizing the development of technological inventions and the creation of original works of authorship.<sup>99</sup> This notion is embedded in the United States Constitution, which empowers Congress “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and inventors the exclusive Right to their respective Writings and Discoveries” (hereinafter, the “IP Clause”).<sup>100</sup> As the analysis below will show, designing intellectual property law in a manner that accommodates the concept of “a right to repair” and balances the exclusive rights granted to intellectual property owners with such a right could serve this end of promoting Progress in three interrelated ways: (i) as an essential component of the “Progress of Science and useful Arts” that Congress is mandated to promote under the Constitution; (ii) as necessary to enable user innovation; and (iii) as a mechanism that enhances the flow of information regarding technological innovation to the public.

### (a) Advancement of Progress

The right to repair can be considered necessary for the advancement of progress, once we move from a narrow and simplistic perception of progress to a more holistic one. The term “Progress” in the IP Clause is traditionally conceived as representing a modernist perception, under which constant innovation and creation is regarded as necessary to maintain perpetual growth and satisfy consumers’ demand for new products and services.<sup>101</sup> Such a concept of progress represents political ideologies of economic

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Sinai, *Beyond Incentives: Expanding the Theoretical Framework for Patent Law Analysis*, 45 AKRON L. REV. 243 (2012) [hereinafter, Tur-Sinai, *Theoretical Framework*]; Ofer Tur-Sinai, *Technological Progress and Well-Being*, 48 LOY. U. CHI. L.J. 145 (2016) [hereinafter, Tur-Sinai, *Technological Progress*].

<sup>99</sup> For sources noting the utilitarian nature of the patent system, see, for example, Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1597 (2003); Robert P. Merges, *Rent Control in the Patent District: Observations on the Grady-Alexander Thesis*, 78 VA. L. REV. 359, 359 (1992); Lisa Larrimore Ouellette, *Do Patents Disclose Useful Information?*, 25 HARV. J.L. & TECH. 545, 554 (2012); Maureen A. O’Rourke, *Toward a Doctrine of Fair Use in Patent Law*, 100 COLUM. L. REV. 1177, 1181–82 (2000). For the dominance of the utilitarian justification for copyright law, see, for example, Jeanne C. Fromer, *An Information Theory of Copyright Law*, 64 EMORY L.J. 71, 73 (2014). Notably, the utilitarian justification for trademark law is different and focuses on their role in reducing consumer’s search costs and in incentivizing businesses to produce consistently high-quality goods and services. See *supra* note 10.

<sup>100</sup> U.S. CONST. art. I, § 8, cl. 8.

<sup>101</sup> See Tur-Sinai, *Technological Progress*, *supra* note 98, at 147.

liberalism, capitalism and consumerism.<sup>102</sup> However, in recent years, various intellectual property scholars have challenged this simplistic account of progress and proposed alternate constructions of this term that are broader and more holistic.

Professor Margaret Chon, for example, rejects the view of progress as a “liberating upward trajectory” and advances a postmodern view of progress, which incorporates “ecologically-based limits to economic growth, as well as the need for the redistribution of existing material wealth within present and between present and future generations”.<sup>103</sup> Chon further posits that “the incentives provided by copyrights and patent are only second-order concerns which serve a higher purpose—the “Progress” project—which preserves and nurtures a commons of knowledge”.<sup>104</sup> Ultimately, Professor Chon maintains that “[a]n idea of progress that rejects sheer material growth as its *sine qua non* changes the focus of our intellectual property laws from competition policy to the complicated interface between science and society”.<sup>105</sup> Similarly, Professors Brett Frischmann & Mark McKenna argue that “the IP Clause leaves open a number of ways to conceive of Progress,”<sup>106</sup> in support of their claim that a normative commitment to intergenerational justice is compatible with the IP Clause.<sup>107</sup>

We share with these scholars the principal view that the constitutional mandate to promote “Progress of the Science and useful Arts” should not be reduced to enabling market incentives to drive technological innovation and artistic creation. In this context, it is important to recall that under a utilitarian worldview, the state’s ultimate goal is to enhance human well-being in society.<sup>108</sup> In order to promote this goal in the context of intellectual property

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<sup>102</sup> *Id.*

<sup>103</sup> Margaret Chon, *Postmodern “Progress”: Reconsidering the Copyright and Patent Power*, 43 DEPAUL L. REV. 97, 99, 127 (1993).

<sup>104</sup> *Id.* at 104. For other critical accounts of the modernist notion of progress underlying IP policymaking and scholarship, see, for example, Estelle Derclaye, *Eudemonic Intellectual Property: Patents and Related Rights as Engines of Happiness, Peace, and Sustainability*, 14 VAND. J. ENT. & TECH. L. 495, 508–19 (2012) (arguing that the progress ideology is parochial); Simone A. Rose, *The Supreme Court and Patents: Moving Toward a Postmodern Vision of ‘Progress’?*, 23 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 1197, 1207 (criticizing the measuring of societal progress on technological advancement and economic growth, while failing to adequately balance “other equally important measures of progress such as improving public health, sustainability, and access to basic research tools”).

<sup>105</sup> Chon, *supra* note 103, at 145.

<sup>106</sup> Brett Frischmann & Mark P. McKenna, *Intergenerational Progress*, 2011 WIS. L. REV. 123 (2011).

<sup>107</sup> *Id.* at 138.

<sup>108</sup> For the link between utilitarianism and the maximization of social welfare, see, for example, Matthew Adler & Eric A. Posner, *Happiness Research and Cost-Benefit*

law, the state needs to not only ensure the development of products and services, but also incentivize their commercialization and broad diffusion. To the extent that consumers are not getting a chance to access and benefit from such products or services, their impact on human welfare cannot be fully realized.<sup>109</sup> As highlighted by Professor Gaia Bernstein, “[a]ttaining the progress objective [...] requires not just innovation but also an adoption process. Progress can be attained only if people adopt and use the new technology”.<sup>110</sup> Indeed, this notion is reflected in the U.S. Supreme Court’s intellectual property jurisprudence. In *Kewanee v. Bicron*, for instance, the Court has explained that patent laws promote progress by incentivizing inventors to make a productive effort that will ultimately “have a positive effect on society through the introduction of new products and processes of manufacture into the economy, and the emanations by way of increased employment and better lives for our citizens”.<sup>111</sup>

Not only should “Progress” be construed in a broader, more holistic, way, but it should also be interpreted in a dynamic manner that takes into account our rapidly changing reality. The notion of “Progress” envisioned by the Framers in the Eighteenth Century is not necessarily equal to the type of “Progress” that would benefit society in the Twenty-First Century. Notably, at present times, as the world is facing a potential major environmental crisis due to

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*Analysis*, 37 J. LEGAL STUD. 253, 255–56 (2008) (discussing the moral framework of utilitarianism); William W. Fisher & Talha Syed, *Global Justice in Healthcare: Developing Drugs for the Developing World*, 40 U.C. DAVIS L. REV. 581, 602 (2007) (noting how utilitarianism “urges lawmakers to choose the course of action that is most likely to produce the highest net social value”). For a discussion of the criterion of well-being that the state should adopt in the context of innovation law and policy, see Tur-Sinai, *Technological Progress*, *supra* note 98.

<sup>109</sup> Indeed, some scholars have emphasized the role of both patent and copyright law in incentivizing the commercialization of new products and works, and not just their initial creation. See, e.g., F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697 (2001) (suggesting a justification to the patent system, which is based on the need to provide “incentive to commercialize” the invention).

<sup>110</sup> See Gaia Bernstein, *In the Shadow of Innovation*, 31 CARDOZO L. REV. 2257, 2259 (2010).

<sup>111</sup> *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480 (1974).

climate change,<sup>112</sup> intellectual property laws must be designed in a manner that is sensitive to environmental outcomes.<sup>113</sup>

Once we embrace such a broader and more dynamic construction of the term “Progress” and a correspondingly broader reading of the IP Clause, it is not difficult to justify the right to repair as a notion that is at least compatible with the rationales underlying intellectual property law. Such a right is likely to enable consumers to enjoy goods and services in a fuller and more meaningful way, which entails more autonomy and involves less dependency upon the original suppliers of such goods and services. Consumers’ enjoyment of the relevant products could also be expected to last for longer periods, assuming that more consumers will choose to repair their products under a regime of competition in repair markets than when these markets are controlled by original manufacturers.<sup>114</sup> Altogether, with a right-to-repair in place, consumers are likely to derive more utility from their consumption of technological goods, what ultimately serves the underlying utilitarian goal of enhancing overall well-being.<sup>115</sup> In addition, the positive

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<sup>112</sup> See, e.g., Michael A. Carrier, *An Antitrust Framework for Climate Change*, 9 NW. J. TECH. & INTELL. PROP. 513, 513 (2011) (“Climate change is one of the most important issues of the twenty-first century.”); Megha Shah, Note, *Grassroots Enforcement of EISA: The Need for a Citizen Suit Provision in the Energy Independence and Security Act of 2007*, 77 GEO. WASH. L. REV. 488, 488 (2009) (noting that former U.N. Secretary General Ban Ki-moon described climate change as “the defining challenge of our age”); see also J.B. Ruhl & James Salzman, *Climate Change Meets the Law of the Horse*, 62 DUKE L.J. 975, 977–78 (2013) (“Climate change is here. Its impacts are present in the current landscape, and, barring miraculous developments in politics and technology, it will be a part of the future for our generation and for many to follow.” (footnote omitted)).

<sup>113</sup> For scholarly discussions acknowledging the need to incorporate environmental considerations into IP policy making, see, for example, Joshua D. Sarnoff, *The Patent System and Climate Change*, 16 VA. J.L. & TECH. 301 (2011); Estelle Derclaye, *Should Patent Law Help Cool the Planet? An Inquiry from the Point of View of Environmental Law: Part II*, 31 EUR. INTELL. PROP. REV. 227 (2009); Jonathan H. Adler, *Eyes on a Climate Prize: Rewarding Energy Innovation to Achieve Climate Stabilization*, 35 HARV. ENVTL. L. REV. 1 (2011); Gregory N. Mandel, *Promoting Environmental Innovation with Intellectual Property Innovation: A New Basis for Patent Rewards*, 24 TEMP. J. SCI. TECH. & ENVTL. L. 51 (2005); Ofer Tur-Sinai, *Patents and Climate Change: A Skeptic’s View*, 48 ENVTL. L. 211 (2018).

<sup>114</sup> See, e.g., Mostafa Sabbaghi, et al., *The Current Status of Consumer Electronics Repair Industry in the U.S.: A Survey-Based Study*, 116 RESOURCES, CONSERVATION AND RECYCLING 137, 143–44 (2017) (discussing price sensitivity of consumers and repair).

<sup>115</sup> Interestingly, recent studies in the field of psychology, point at the relation between a “Maker identity”, (i.e., being involved in do-it-yourself activities) and subjective well-being. See, e.g., Ann Futterman Collier & Heidi A. Wayment, *Psychological Benefits of the “Maker” or Do-It-Yourself Movement in Young Adults: A Pathway Towards Subjective Well-Being*, 19 HAPPINESS STUD. 1217 (2018).

impact on our natural environment that a legal regime enabling repairs could have certainly aligns with a more holistic concept of Progress.<sup>116</sup> Altogether, a society in which consumers can choose who would repair their products is a more progressive society than a society where the repair business is monopolized by original manufacturers.

While many of the arguments noted in the last paragraph have been brought up by the right-to-repair advocates as external justifications for the legislation, what has been missing is the link to intellectual property rights. As we have just demonstrated, such arguments can also be framed as components of an internal justification for the right-to-repair—one that views such a right as a vital component of an intellectual property regime that aims to promote Progress.

(b) Enabling User Innovation

Even if we stick to a narrower concept of Progress and simply focus on the need to incentivize the development of novel technological products and the creation of original works of authorship, a right to repair can still be justified as necessary to facilitate and encourage user innovation.

As demonstrated in the work of Professor Eric von Hippel and others, “users of products and services—both firms and individual consumers—are increasingly able to innovate for themselves.”<sup>117</sup> Indeed, in today’s innovation landscape, innovation in many technological fields is often originated from users of technology, who develop new products and services to satisfy their own needs, rather than to sell them.<sup>118</sup> While this is beneficial to the individuals engaging in the practice of innovation, such innovative activity can also yield significant benefits to society. The innovations created often diffuse to peers and to commercial firms that may adopt them as the basis for valuable market products.<sup>119</sup>

Yet, in order to enable and encourage user innovation, the intellectual property system must preserve a space for users to tinker, experiment, and

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Inasmuch as this is true, it adds another layer of support to the argument that having a right-to-repair may enhance the value that consumers derive from their products.

<sup>116</sup> See *supra* notes 112-113 and accompanying text.

<sup>117</sup> ERIC VON HIPPEL, *DEMOCRATIZING INNOVATION* 1 (2005). For a list of examples of user innovation, see Katherine J. Strandburg, *Users as Innovators: Implications for Patent Doctrine*, 79 U. COLO. L. REV. 467, 468-69 (2008).

<sup>118</sup> See Strandburg, *supra* note 117, at 469. For other prominent works exploring user innovation, see VON HIPPEL, *supra* note 117; William W. Fisher III, *The Implications for Law of User Innovation*, 94 MINN. L. REV. 1417 (2010); Andrew W. Torrance & Eric von Hippel, *The Right to Innovate*, 2015 MICH. ST. L. REV. 793 (2015); Samuelson, *supra* note 24.

<sup>119</sup> *Id.*

otherwise engage with their products in various ways.<sup>120</sup> In this vein, users should also be free to engage in repairs of technological products without fear of infringement liability.<sup>121</sup> A right to repair, in other words, is an essential component of a legal environment conducive to user innovation.

More concretely, while repairing a product, a user could come up with ideas for improvements, variations or spin-offs of the same product or be inspired to design something new. One famous example for an innovation born out of repair is the first operative airplane built by the Wright Brothers at the beginning of the twentieth century. The Wright Brothers, working alone from their bicycle repair shop, solved the problem of “controlled flight” that had occupied the minds of many engineers throughout the years. The solution was found while Wilbur, one of the brothers, was toying in their store with a rectangular bicycle inner-tube box. Wilbur realized that by connecting the motion of a flying machine’s wings in relation to one another, twisting the axis of the wings in the same way a box twists, a pilot could control the aircraft. This breakthrough nicknamed “wing warping” led to the successful development of the first airplane and is considered a foundation to modern-day aeronautics.<sup>122</sup>

In addition to innovations related to the product itself, innovation in the repair industry itself is also likely to increase the more this industry is open for competition. Consumers and independent repair shops could come up with new methods of repair, develop or improve repair tools, and create user-generated tips, manuals and kits that could significantly benefit others.<sup>123</sup> More generally, while repairing products, users are likely to increase their technological savviness and mechanical skills and acquire knowledge and tools, which could prove helpful at a later point as they come across an opportunity to be involved in an innovative endeavor.<sup>124</sup>

To conclude, a right to repair can directly lead to further innovation, and thus, can be justified from the perspective of dynamic efficiency underlying intellectual property laws. Once again, we see that the justification for the

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<sup>120</sup> For the importance of the right to tinker, see Samuelson, *supra* note 24.

<sup>121</sup> See, with respect to the link between repair and user innovation, Strandburg, *supra* note 120, at 494-95.

<sup>122</sup> See, e.g., Katherine White, *What If Bicycles Held the Secret to Human Flight?*, <https://www.thehenryford.org/explore/stories-of-innovation/what-if/wright-brothers/>. See also Brittany McCrigler, *The Wright Way to Teach Engineering*, <https://ifixit.org/blog/4404/the-wright-way-to-teach-engineering/> (noting other “bike repair concepts” that are mirrored in the airplane built by the Wright Brothers).

<sup>123</sup> For examples for a variety of repair tools and manuals, see [www.ifixit.com](http://www.ifixit.com).

<sup>124</sup> Consider, again, the Wright Brothers, whose innovative techniques in engineering are commonly attributed to their hands-on experience in repair.

right to repair can be predicated on the same rationales that are normally used to justify the exclusive rights of intellectual property owners.

(c) Promotion of Information Disclosure

A third way by which a right to repair fits in the utilitarian justification for intellectual property rights has to do with the disclosure function of patents. One of the economic theories offered for the justification of patent law under the utilitarian overarching framework is the incentive to disclose theory.<sup>125</sup> Under this theory, patents contribute to progress by incentivizing disclosure of information that would have otherwise remained secret to the public. This theory is often framed in terms of a “bargain” between the inventor and the state.<sup>126</sup> To enjoy the period of exclusivity offered by the state, the inventor must disclose certain information related to her invention that ultimately becomes part of the public domain.<sup>127</sup> As stated by the Supreme Court, in *Kewanee v. Bicron*:

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<sup>125</sup> For sources describing the incentive-to-disclose theory, see, for example, Rebecca S. Eisenberg, *Patents and the Progress of Science: Exclusive Rights and Experimental Use*, 56 U. CHI. L. REV. 1017, 1028–29 (1989); Wendy J. Gordon, *Intellectual Property*, in THE OXFORD HANDBOOK OF LEGAL STUDIES 617, 632 (Peter Cane & Mark Tushnet eds., 2003); Ouellette, *supra* note 99, at 571–81; Julie S. Turner, *The Nonmanufacturing Patent Owner: Toward a Theory of Efficient Infringement*, 86 CALIF. L. REV. 179, 189–90 (1998).

<sup>126</sup> The notion of the “patent bargain” refers to the “bilateral relationship between the inventor and the state under whose terms the inventor must disclose in exchange for protection of a property right in the invention.” Shubha Ghosh, *Patents and the Regulatory State: Rethinking the Patent Bargain Metaphor After Eldred*, 19 BERKELEY TECH. L.J. 1315, 1338 (2004). See also Gordon, *supra* note 125, at 632 (discussing the notion of patent as “bargain”: “the government gives the possibility of exclusivity and in exchange the patent applicant gives disclosure”); Jeanne C. Fromer, *Patent Disclosure*, 94 IOWA L. REV. 539, 553 (2009) (“The accepted understanding in patent policy and doctrine is that disclosure of a patented invention to the public—and its dedication to the public after the expiration of the patent term—is part of a quid pro quo the patentee must provide to gain the broad patent right.”). In the Supreme Court’s words, “[T]he quid pro quo [for the patent grant] is disclosure of a process or device in sufficient detail to enable a person skilled in the art to practice the invention once the period of the monopoly has expired”. *Universal Oil Prods. Co. v. Globe Oil & Refining Co.*, 322 U.S. 472, 484 (1944).

<sup>127</sup> As part of the disclosure requirement, the inventor must adequately disclose three separate elements: (1) enough information to indicate that the inventor is in possession of the claimed invention (the “written description” requirement), (2) the manner and process of making and using the invention, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same (the “enablement” requirement), and (3) the best mode contemplated by the inventor of carrying out his invention (the “best mode” requirement). See 35 U.S.C. § 112 (2006); DONALD S. CHISUM, CHISUM ON PATENTS § 7–9 (2010); Fromer, *supra* note 126, at 546.

When a patent is granted and the information contained in it is circulated to the general public and those especially skilled in the trade, such additions to the general store of knowledge are of such importance to the public weal that the Federal Government is willing to pay the high price of 17 years of exclusive use for its disclosure, which disclosure, it is assumed, will stimulate ideas and the eventual development of further significant advances in the art.<sup>128</sup>

The current disclosure obligations under the patent law do not mandate the applicant to disclose information that would enable repair of an invented product; only “the manner and process of making and using the invention.”<sup>129</sup> One could possibly argue that to be able to meaningfully use the invention, a user must have information that would enable repairs if needed. Yet, the statutory disclosure obligations have never been construed as encompassing a duty to supply repair information and we highly doubt that they ever would be.

In any event, looking at the right to repair from the perspective of the incentive to disclose theory highlights another aspect by which allowing repairs may promote “Progress”. Enabling the repair of a product by consumers and independent repair shops may result in a wider diffusion of knowledge about the technological features of the invention embedded in said product. In essence, a right to repair could complement the existing patent disclosure requirements in facilitating a flow of information regarding technological innovation to the public. To better serve this aim, repairers should also be allowed to diffuse repair information publicly through manuals, do-it-yourself videos etc. Notably, repair information that is supplied by manufacturers or independently uncovered by users would remain accessible to the public even if the intellectual property owner ceases production and distribution of the product and stop offering repair services with respect thereto.<sup>130</sup> The continuing availability of such information could be important not only from the narrow perspective of the ability to repair the specific product, but also as a stimulant for follow-on innovation.<sup>131</sup>

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<sup>128</sup> *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470 (1974).

<sup>129</sup> See *supra* note 127.

<sup>130</sup> Cf. Ariel Katz, *The First Sale Doctrine and the Economics of Post-Sale Restraints*, 2014 BYU L. REV. 55, 111 (2014) (maintaining that enabling works to remain accessible to the public is one of the benefits of the first sale doctrine in copyright law).

<sup>131</sup> See the quote above from *Kewanee v. Bicron*, *supra* note 128, for the assumption that disclosure “will stimulate ideas and the eventual development of further significant advances in the art”.

## (2) Non-Utilitarian Justifications

In addition to the utilitarian justification, the right to repair can be justified from the perspective of certain non-utilitarian theories that have often been used in theoretical discussions of intellectual property law: the labor theory; personality theory; and social planning theory. The next paragraphs will briefly survey these theories and the potential insights that can be drawn from them in respect to the justifications for a right to repair.

### (a) Labor Theory

The labor theory, based on the work of John Locke,<sup>132</sup> is one of the principal theories used to justify property rights,<sup>133</sup> and it is also often used in the context of intellectual property.<sup>134</sup> Under the labor theory, the right of every person to the fruits of her labor is limited by two provisos: (1) “there is enough, and as good left in common for others”,<sup>135</sup> and (2) the laborer does not waste resources by taking more than she needs for her own use, including use by means of exchange with others.<sup>136</sup>

Using intellectual property rights to block consumers from repairing their own products and secure control over the repair industry does not seem to align with these provisos. Generally speaking, the more we broaden the scope of intellectual property rights and give their owners complete control over ancillary markets as well, we would be narrowing down the opportunities of others to labor and earn sustenance, which would be contrary to the first proviso.<sup>137</sup> As to the second proviso, a legal regime that does not allow for independent repair of consumer products would most certainly result in waste to the extent that consumers may choose not to repair their products under such a regime, but rather buy new products. In such a case, the social value of the product is not fully realized. Therefore, a right to repair consumer

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<sup>132</sup> See JOHN LOCKE, TWO TREATISES OF GOVERNMENT 290–91 (Peter Laslett ed., Cambridge Univ. Press 1988) (1690).

<sup>133</sup> See, e.g., J. W. HARRIS, PROPERTY AND JUSTICE 182-212 (1996); STEPHEN R. MUNZER, A THEORY OF PROPERTY 254-91 (1990); JEREMY WALDRON, THE RIGHT TO PRIVATE PROPERTY 19 (1988).

<sup>134</sup> See, e.g., Lawrence C. Beker, *Deserving to Own Intellectual Property*, 68 CHI.-KENT L. REV. 609 (1993); Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287 (1988); Benjamin G. Damstedt, *Limiting Locke: A Natural Law Justification for the Fair Use Doctrine*, 112 YALE L.J. 1179 (2003); Wendy J. Gordon, *A Property Right in Self Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533 (1993); Tur-Sinai, *Theoretical Framework*, *infra* note 98.

<sup>135</sup> LOCKE, *supra* note 132, at 288.

<sup>136</sup> *Id.* at 290.

<sup>137</sup> Damstedt, *supra* note 134, at 1187.

products may be a critical component of an intellectual property system under the labor theory.

(b) Personality Theory

The right to repair can also be justified under the personality theory of property, which is based on the work of Hegel.<sup>138</sup> Under the personality theory, private property is necessary as a means for developing and realizing one's personality.<sup>139</sup> Pursuant to Hegel, a person cannot begin to realize her self-identity until she is given an opportunity to exercise her will on external objects in her surroundings.<sup>140</sup> In order for a person to enjoy freedom of action with respect to assets and a sense of security with respect to the continuity of her relationship with them, and to be able to uniquely identify herself based on her relationship with such assets, she should be provided a certain level of control over the assets, which is the reason that the institution of private property is necessary.<sup>141</sup> The personality theory has been used to justify rights in tangible property and in intellectual property as well.<sup>142</sup>

Entrusting control over repair of consumer products in the hands of the original manufacturers denies consumers what may constitute an important dimension of their ownership of such products. The ability to control the "destiny" of their own property and to decide how to handle it when it is malfunctioning is arguably essential for individual consumers' ability to preserve a sense of autonomy and realize their self-identity pursuant to the personality theory.<sup>143</sup> In addition, consumers who choose to repair their products on their own could benefit from the "exercise of competence, meaningful engagement, and self-expression."<sup>144</sup> At the same time, carving out a space for a right to repair consumer products does not seem to harm the personality interests of owners of intellectual property rights that are

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<sup>138</sup> See generally G.W.F. HEGEL, *PHILOSOPHY OF RIGHT* (S.W. Dyde trans., 1996) (1821)).

<sup>139</sup> HEGEL, *supra* note 138, at 51-52.

<sup>140</sup> *Id.*

<sup>141</sup> *Id.* See also Margaret Jane Radin, *Property and Personhood*, 34 STAN. L. REV. 957, 972-72 (1982); Hughes, *supra* note 134, at 330; Brian M. Hoffstadt, *Dispossession, Intellectual Property, and the Sin of Theoretical Homogeneity*, 80 S. CAL. L. REV. 909, 934, 948 (2007).

<sup>142</sup> See, e.g., Lawrence C. Becker *Deserving to Own Intellectual Property*, 68 CHI.-KENT L. REV. 609 (1993); Hughes, *supra* note 134; Tur-Sinai, *Theoretical Framework*, *supra* note 98.

<sup>143</sup> See, e.g., Samuelson, *supra* note 24, at 565 (noting the "intellectual privacy and autonomy interest" in investigating and exploring consumer products as an essential feature of the "freedom to tinker" which the author advocates).

<sup>144</sup> Cf. Fisher, *supra* note 118, at 1463-72 (noting that these factors are evident in connection with user innovation).

embodied in such products. In fact, when the owner of the rights is a corporation, rather than a private individual, the personality interest is largely irrelevant.<sup>145</sup> For all these reasons, the personality theory can also bolster the arguments in favor of a right to repair.

### (c) Social Planning Theory

Another theoretical approach that is often taken in discussions of intellectual property law is the “social planning theory”. As described by Professor William Fisher, who coined this term, this approach is rooted in the proposition that the law “can and should be shaped so as to help foster the achievement of a just and attractive culture”.<sup>146</sup> Another related concept that is used by scholars that view intellectual property law as a mechanism for social engineering is “social justice”.<sup>147</sup> One of the main difficulties associated with this theoretical approach is the need to agree on a particular vision of a just society that needs to be promoted. Among the notions that are often noted in this context are distributive justice<sup>148</sup> and balancing between competing stakeholders.<sup>149</sup>

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<sup>145</sup> For discussion, see Tur-Sinai, *Theoretical Framework*, *supra* note 98, at 285. See also David McGowan, *Copyright Nonconsequentialism*, 69 MO. L. REV. 1, 6-7 (2004) (noting that rights-holding firms lack the individuality commonly associated with theories of personal autonomy).

<sup>146</sup> See Fisher, *supra* note 96 (noting that the social planning approach “is similar to utilitarianism in its teleological orientation, but dissimilar in its willingness to deploy visions of a desirable society richer than the conceptions of “social welfare” deployed by utilitarians”). See also Madhavi Sunder, IP3, 59 STAN. L. REV. 257 (2006) (discussing intellectual property’s social effects and the conception of this law as a tool for crafting cultural relations); Chidi Oguamanam, *Beyond Theories: Intellectual Property Dynamics in the Global Knowledge Economy*, 9 WAKE FOREST IP L.J. 104, 128 (2009) (noting that the social planning theory “has been espoused by an array of voices under different but related conceptual alignments”); Grinvald, *supra* note 98 (analyzing Chinese trademark law under the lens of the social planning theory).

<sup>147</sup> See Lateef Mtima, *Copyright Social Utility and Social Justice Interdependence: A Paradigm for Intellectual Property Empowerment and Digital Entrepreneurship*, 112 W. VA. L. REV. 97 (2009); Steven D. Jamar & Lateef Mtima, *A Social Justice Perspective on Intellectual Property, Innovation and Entrepreneurship*, in *ENTREPRENEURSHIP AND INNOVATION IN EVOLVING ECONOMIES: THE ROLE OF LAW* (Megan Carpenter, ed., 2012).

<sup>148</sup> See Fisher, *supra* note 96 (noting distributive justice as one of the features of a just and attractive culture); Mtima, *supra* note 147 (discussing the use of intellectual property law as an engine for the socioeconomic advancement of marginalized communities). See also Sunder, *supra* note 146, at 273 (integrating concerns for distributive justice as part of his “cultural analysis of intellectual property” theory); ROBERT P. MERGES, *JUSTIFYING INTELLECTUAL PROPERTY* 102-136 (2011) (demonstrating how intellectual property law embodies distributive justice considerations).

<sup>149</sup> See, e.g., Oguamanam, *supra* note 146, at 129 (noting that “[t]he social planning school of thought aspires towards a regime of intellectual property rights that

It is easy to explain why a right to repair could be justified from the perspective of a social planning theory. Such a right presumably advances the position of individual consumers and independent repair shops vis-à-vis original manufacturers of consumer goods. By doing so, it balances between the legitimate interests of such consumers with the need to protect intellectual property rights, while simultaneously advancing socio-economic equality.

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We have seen that the right to repair can be justified not only by a multitude of justifications which are external to intellectual property law, but also by various justifications that are commonly used to justify intellectual property rights. In essence, the right to repair could be conceived as necessary to enable intellectual property law to achieve its prescribed goals.

Interestingly, many of the justifications brought up by the advocates of the right to repair legislation (and presented originally as external justifications) can be integrated within, and presented as components of, the internal justifications as well. We have illustrated this, for example, with respect to the argument regarding the need to prevent waste in order to preserve the environment. Enabling repairs of protected products in an effort to minimize waste could be viewed as a vital component of an intellectual property regime that is designed to promote Progress;<sup>150</sup> and, for similar reasons, as a necessary exception to the scope of protection under the “sufficiency proviso” of the labor theory.<sup>151</sup> As another example, we have demonstrated that considerations related to consumer autonomy and the need to respect consumers’ property rights are integral to the analysis under the personality theory.<sup>152</sup>

Tying these seemingly external justifications with the fundamental notions underlying intellectual property law may help in advancing an understanding of how important it is to acknowledge, and carve out a space for, a right to repair within intellectual property law. To put it simply, viewing the right to repair as justified by, or at least compatible with, the rationales underlying intellectual property protection, can bolster the case for such a right.

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advances a balanced cultural and a balanced competing stakeholders’ vision of intellectual property”); Neil Netanel, *Copyright and a Democratic Civil Society*, 106 YALE L.J. 283 (1996) (recommending certain reforms in copyright law, including employment of compulsory licensing systems more often to balance the interests of artists and consumers of their works).

<sup>150</sup> See *supra* note 116 and accompanying text.

<sup>151</sup> See *supra* note 137 and accompanying text.

<sup>152</sup> See *supra* notes 143-145 and accompanying text.

However, as justified as a right to repair may be, its implementation should not be allowed to weaken intellectual property protection to a sub-optimal level. Taking control of the repair business out of the hands of manufacturers can undoubtedly affect their profits. For the most part, we do not think that this would undercut the ability of intellectual property systems to effectively incentivize inventors and creators.<sup>153</sup> Yet, adequate balancing between the considerations at stake is clearly more nuanced and context dependent. One distinction that may be relevant in calibrating the scope and nature of a right to repair is between contexts where implementing it would affect the primary market designated to be controlled by the intellectual property owner—for instance, when the relevant legal measure employed to facilitate repairs disrupts exclusivity in the market for protected replacement parts—and contexts where only secondary markets are impacted. Another relevant consideration that may impact the proper balancing is whether any duty is imposed on the manufacturers (a duty not to interfere with the right to repair or a more active duty) or are we merely dealing with a consumers' privilege.

These and other considerations will guide us in Part III, where we take a close look at intellectual property law, in order to view the extent to which a right to repair is compatible with it. Such an exploration is necessary, first, in order to ensure that the proposed state legislation is not preempted by intellectual property law; and second, in order to guarantee that once such legislation passes, the ability to exercise the right to repair will not be circumvented by the exercise of any of the rights that original manufacturers have under intellectual property laws. While exploring the different branches of intellectual property law, we will identify certain rules and doctrines that already accommodate, to some extent, the need for a right to repair and examine whether such rules and doctrines are designed in a manner that satisfactorily balances between the considerations at stake. At the same time, in contexts where current doctrine does not sufficiently take into account the need to enable repairs, we will evaluate the need to construe or amend the law.

### III. INTELLECTUAL PROPERTY RAMIFICATIONS FOR THE RIGHT TO REPAIR

In order to account for the distinctions noted above in Part II, and other factors that may have bearing on the proper balancing between the different interests and considerations at stake, the discussion in this Part III will be divided into what we view as four different concentric circles of the right to repair. The analysis will begin with what we perceive as the core of the right to repair—the right of individual consumers to engage in the activity of

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<sup>153</sup> For discussion, see *infra* Part IV.

repairing their own product; and then move to outer circles: the freedom to engage in other activities that facilitate repairs, including diffusion of repair information and advertising repair businesses; next, the right to manufacture, import, sell and use replacement parts; and finally—the right to mandate original manufacturers to disclose repair information and supply replacement parts.

### *A. Repair by Individual Consumers*

At the very core of the right to repair is the right of individual consumers to engage in repair activities. Here, all the justifications explored above in Part II are directly applicable, including the need to preserve the autonomy of consumers and enable them to exercise their property rights in their products as well as the potential contribution of independent repair activity to Progress in the different manners explored above. At the same time, enabling repair by consumers does not entail mandating the original manufacturers to do much. In this sense, it might be tempting to characterize the nature of consumers' legal entitlement to repair as a "privilege," in the Hohfeldian sense of the term, rather than a right.<sup>154</sup> Yet, we think the term "right" is more accurate, even with respect to this core layer. This is so, because in order for the consumers' entitlement to repair to be meaningful, it must be correlated with a duty of the original manufacturers to *not* interfere with the exercise of the right (for instance, by way of enforcing intellectual property rights against individual consumers with respect to repair actions on their own products).<sup>155</sup>

Regardless, as stated above, within this core layer, manufacturers are under no duty to take any affirmative actions to facilitate performance of repairs, and this—coupled with the importance of enabling the core activities—makes a balancing of manufacturer interests and consumer interests easy in this context, and in favor of repair. Furthermore, enabling repairs does not impact the primary market for any protected invention embodied in the product, which was already sold once, by or under the authorization of the manufacturer to the consumer, and thus, we could adopt measures to secure this layer of the right to repair, without fear of reducing any intellectual property incentives to a sub-optimal level.<sup>156</sup>

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<sup>154</sup> See Wesley N Hohfeld, *Some Fundamental Legal Conceptions as Applied in Judicial Reasoning*, 23 YALE L.J. 16 (1913); Wesley N Hohfeld, *Fundamental Legal Conceptions as Applied in Judicial Reasoning*, 26 YALE L.J. 710 (1917).

<sup>155</sup> See discussion *infra* in Part III.A.2 regarding copyright law and Section 1201.

<sup>156</sup> See *also* discussion *infra* Part IV.

Interestingly, the proposed model legislation does not deal with this aspect at all, although even this layer of the right to repair should not be taken for granted. As the discussion below demonstrates, repairing a product may implicate patent and copyright law issues.<sup>157</sup> While it is unclear how many manufacturers would take action against individual consumers, the fact that consumers are exposed to potential legal liability is still problematic. Therefore, there is a need to examine how intellectual property law may stymie this freedom of consumers and how courts or legislation could resolve this issue.

### (1) Repairing Patented Products

Under Section 271 of the Patent Act, “whoever without authority makes, uses, offers to sell, or sells any patented invention ... during the term of the patent therefore, infringes the patent”. Repairing a patented product entails a use of the invention and, therefore, counts as patent infringement unless otherwise permitted.<sup>158</sup>

Fortunately, patent law recognizes a right to repair to a considerable extent.<sup>159</sup> Under the doctrine of patent exhaustion, an authorized sale of a patented item exhausts the patentee’s rights with respect to that item, leaving the purchaser and subsequent owners free to use or resell it without

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<sup>157</sup> Notably, trademark law or trade secret law are not seemingly implicated by this layer and therefore not addressed in this section. Trademark law requires that the original trademark be “used in commerce.” Where the owner of the product makes the repairs herself, courts have held that there has been no use in commerce, and therefore, trademark law is not brought into question. *Karl Storz Endoscopy America Inc. v. Surgical Technologies, Inc.* (9<sup>th</sup> Cir. 2002) (“We do, however, recognize the right of property owners to repair or alter trademarked goods without implicating the Lanham Act. For example, if the owner chooses to buy aftermarket spare parts and do the repairs himself, there is no sale of a trademarked good in commerce, and hence no trademark infringement.”). Similarly, trade secret law is not implicated in this scenario, assuming that the owner of a product is utilizing information and know-how that is publicly available or she is able to obtain herself through reverse-engineering

<sup>158</sup> This is true with respect to both a utility patent and a design patent.

<sup>159</sup> In addition to the right of repair that exists by nature of the exhaustion doctrine that is discussed below, another possibility to shield repair activity from the control of the owner of a patent could have been classifying it as a private, non-commercial use of the invention. Alas, the United States does not have a “private use” exception from patent infringement, similarly to the one existing in various other legal systems, and thus—this is not an actual possibility. See Roger D. Blair & Thomas F. Cotter, *An Economic Analysis of Seller and User Liability in Intellectual Property Law*, 68 U. CIN. L. REV. 1, 3 (1999) (noting that U.S. patent law is “inconsistent with the practice in some other countries, which exempts from liability the private, noncommercial use of patented inventions”).

fear of an infringement lawsuit.<sup>160</sup> As part of the “use” of the product, its owner can repair it, if necessary. Yet, courts have drawn a distinction between repair and reconstruction. While repair is permissible, the reconstruction of a patented product amounts to the making of a new article, and thus, constitutes patent infringement.<sup>161</sup> Courts have struggled in drawing the line between repair and reconstruction.<sup>162</sup>

Given the gray line between what is considered a repair versus reconstruction, the ability of consumers to operate freely has been limited. But, as the line between repair and reconstruction is a judicially-constructed one, recognizing the strong justifications for a right to repair can lead to a shift in the way this line is drawn. In doing so, courts could ultimately classify more uses as permissible repairs rather than as reconstruction, which would provide consumers more freedom in repairing their products.

But what if the patent owner prohibits independent repairs as part of the sale or license agreement with the consumer? As an example for a contract provision that may be construed as prohibiting repairs, see, for example, the Samsung Galaxy smartphone End User License Agreement, which states: “Any changes or modifications to your mobile device not expressly approved by Samsung could void your warranty for this equipment and void your authority to operate this equipment.”<sup>163</sup> Similarly, farm equipment sold by John Deere is accompanied by an end user license agreement that prevents consumers from accessing the software embedded in the equipment, as well as making any repairs other than with an authorized repair provider.<sup>164</sup>

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<sup>160</sup> See, e.g., *Impression Prods. v. Lexmark Int’l, Inc.*, 137 S. Ct. 1523, 1529 (2017); *Quanta Comput., Inc. v. LG Elecs., Inc.*, 553 U.S. 617, 625 (2008); *Bowman v. Monsanto Co.*, 569 U.S. 278, 283 (2013); *Lexmark Int’l, Inc. v. Impression Prods.*, 816 F.3d 721, 726 (Fed. Cir. 2016).

<sup>161</sup> For a leading case, see *Aro Mfg. Co. v. Convertible Top Replacement*, 365 U.S. 336 (1961).

<sup>162</sup> See *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 709 (Fed. Cir. 1992) (“Although the rule is straightforward its implementation is less so, for it is not always clear where the boundary lies: how much ‘repair’ is fair before the device is deemed reconstructed.”); Mark D. Janis, *A Tale of the Apocryphal Axe: Repair, Reconstruction and the Implied License in Intellectual Property Law*, 58 MD. L. REV. 423, 425 (1999) (“The repair-reconstruction dichotomy has baffled and annoyed courts for decades, often driving courts to employ ‘loose language.’”).

<sup>163</sup> Samsung, Terms & Conditions/Health & Safety Information, Section 3, “Cautions and other important safety information,” available at <https://www.samsung.com/us/Legal/Phone-HSGuide/#Cautions%20and%20Other%20Important%20Safety%20Information> (last visited Oct. 18, 2018).

<sup>164</sup> <https://www.forbes.com/sites/jasonbloomberg/2017/04/30/john-deeres-digital-transformation-runs-afoul-of-right-to-repair-movement/#7ade343a5ab9>.

For many years, the Federal Circuit has treated exhaustion as a default rule that may be contracted around, enabling patent owners to enforce post-sale restrictions through patent infringement lawsuits.<sup>165</sup> However, in its recent landmark decision in *Impression Products v. Lexmark International*, the Supreme Court held that an authorized sale of a patented item exhausts all patent rights with respect to that item, regardless of any restrictions on use the patentee purports to impose.<sup>166</sup> In other words, violations of such restrictions no longer have remedies in patent law.<sup>167</sup>

Nevertheless, the Supreme Court in *Impression Products* did not rule out the possibility that the patent owner can enforce post-sale restrictions (including non-repair clauses) under contract law in a state court. An action for a breach of contract is surely not as effective or as rewarding as a patent infringement lawsuit.<sup>168</sup> Still, the possibility of being sued may deter consumers and repair businesses, and thus—it is important to find ways to decrease this concern.<sup>169</sup>

One possible way to deal with this is to look to certain contract law doctrines to strike down post-sale restrictions on repair, particularly when the contract at hand is a standard form contract, involving parties of unequal bargaining power, rather than an agreement concluded between commercial parties

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<sup>165</sup> The rule was promulgated in *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F. 2d 700, 701 (Fed. Cir. 1992) (“Use in violation of a valid restriction may be remedied under the patent law, provided that no other law prevents enforcement of the patent.”) and was applied consistently by the Federal Circuit ever since.

<sup>166</sup> *Impression Prods. v. Lexmark Int’l, Inc.*, 137 S. Ct. 1523, 1532-33 (2017).

<sup>167</sup> See Rinehart, *supra* note 93, at 486.

<sup>168</sup> To begin with, the contractual route cannot be used against entities with which the patent owner does not have a privity of contract. In addition, the remedies for a breach of contract are generally not as broad as the remedies for patent infringement. Even after the Supreme Court decision in *eBay, Inc. v. MercExchange, LLC*, 547 U.S. 388 (2006), which made it more difficult for patent plaintiffs to obtain injunctions, injunction is still a common remedy in patent infringement lawsuits. See, e.g., Megan M. La Belle, *Against Settlement of (Some) Patent Cases*, 67 VAND. L. REV. 375, 402 (2014) (“[E]ven after eBay, permanent injunctions remain the norm in patent cases when there is a finding of infringement.”). In contrast, under contract law, specific performance is deemed an extraordinary remedy, awarded at the court’s discretion. See, e.g., Alan Schwartz, *The Case for Specific Performance*, 89 YALE L.J. 271, 272 (1979). The shift from infringement remedies to contract remedies could also decrease the magnitude of monetary damages available to the plaintiff. Among other things, while contract monetary remedies are limited to expectation damages, in a patent infringement suit, the court may award punitive damages and recovery of attorney’s fees as well.

<sup>169</sup> A threat of litigation through cease-and-desist letters would likely be enough to deter any individual consumer. See generally Leah Chan Grinvald, *Policing Cease-and-Desist Letters*, 49 U.S.F. L. REV. 409 (2015).

dealing at arm's length.<sup>170</sup> Among such doctrines, the public policy exception to contract enforcement or the unconscionability doctrine may prove particularly relevant.<sup>171</sup> The downside to simply relying on these doctrines is that it still exposes consumers to potential liability and in order to invalidate a contract, a consumer would need to be prepared to dispute the terms.<sup>172</sup>

Alternatively, and perhaps more effectively, states could step in to declare post-sale restrictions on repair void and unenforceable. This can be done as part of the same state legislation that deals with the right to repair. In fact, as discussed above in Part I.C., the proposed model legislation already includes a provision along these lines that applies in a more limited context. Under Section 5(b) of the proposed legislation, "any provision in [the terms of a contract between an authorized repair provider and an original equipment manufacturer] that purports to waive, avoid, restrict, or limit the original equipment manufacturer's obligations to comply with this Act shall be void and unenforceable".<sup>173</sup> Thus, one of the main ways the right to repair legislation could be more widely applicable and effective is to add an explicit provision that states consumers' right to repair their products and expand the scope of the provision stated above to include that in any type of transfer contract, any restriction on the right to repair would be void and unenforceable.<sup>174</sup>

One important limitation of the use of the exhaustion doctrine as a safe harbor for repair activities has to do with the distinction between sales and licenses embedded in patent exhaustion jurisprudence and reaffirmed by the Supreme Court in *Impression Products*. In contrast to an authorized sale of a patented product, a mere license of same product does not trigger exhaustion.<sup>175</sup> Therefore, if a firm manages to structure the transactions with its consumers in a manner that do not entail full transfer of ownership,

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<sup>170</sup> As an example for such a uniform contract, see *supra* note 163 and accompanying text.

<sup>171</sup> For relevant discussion, see Daniel Laster, *The Secret Is Out: Patent Law Preempts Mass Market License Terms Barring Reverse Engineering for Interoperability Purposes*, 58 BAYLOR L. REV. 621, 693–97 (2006). Notably, the patent misuse doctrine (see *infra* note 178 and accompanying text) is irrelevant in such cases, where the enforcement of post-sale restrictions under patent law is already barred under the exhaustion doctrine and the only question is whether the patentee should be allowed to enforce such restrictions under contract law.

<sup>172</sup> The problem here is that many of these standard-form contracts now include mandatory arbitration clauses, which prevent consumers from banding together in a class action lawsuit against manufacturers for any such abusive contractual terms.

<sup>173</sup> See REPAIR.ORG, LEGISLATIVE TEMPLATE, *supra* note 16.

<sup>174</sup> The term "void and unenforceable" is important because it allows for consumers to disregard any such terms without having to cause any contract terms that falls into this category to be voided.

<sup>175</sup> *Impression*, 137 S. Ct. at 1534.

including, for instance, by adopting subscription-based or leasing business models, then the exhaustion doctrine would not apply, and such firm would be able to continue imposing effective limitations on the use of its products, including no-repair clauses.<sup>176</sup>

In light of this distinction, it is likely that certain businesses would try to hide the true economic nature of a transaction and disguise it as a mere license even when it is actually a sale. The need to ensure that intellectual property rights would not be used to circumvent the right to repair increases the urgency of developing tests that would enable courts to distinguish between *de facto* sales from other transactions that are authentically not sales.

To be sure, even if a transaction is not classified as a sale, and no exhaustion is triggered, the ability to enforce post-sale restrictions on repair via patent law is not guaranteed. As noted above, such restrictions could be invalid as far as contract law is concerned.<sup>177</sup> Moreover, in light of the strong policy considerations favoring repair, courts should consider viewing such restrictions as constituting patent misuse.<sup>178</sup> Accepting a patent misuse defense raised in infringement litigation renders the patent unenforceable. Thus, this doctrine may serve as a tool to preserve a right to repair in the face of non-repair clauses even for users that are not protected by exhaustion.

## (2) Copyright Implications of Repair

Copyright law reflects, to a limited extent, the notion of a right to repair at this core layer. Section 117(c) of the Copyright Act provides an exemption to owners or lessees of computers that allows them to make copies of software in order to maintain or repair the machine without infringing the copyright of the software.<sup>179</sup>

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<sup>176</sup> See Aaron Perzanowski, *Lexmark and the Future of Sales*, THE END OF OWNERSHIP (June 1, 2017), <http://www.theendofownership.com/blog/2017/6/1/thoughts-on-impression-products-v-lexmark> (“Another potential concern is that companies like Lexmark will stop selling products altogether and move to lease, rental, or subscription models that don’t entail transfers of ownership to consumers.”).

<sup>177</sup> See *supra* notes 170-174 and accompanying text.

<sup>178</sup> Patent misuse can be raised as a defense in patent litigation when the patentee takes unfair advantage of its patent rights. See, e.g., Gaia Bernstein, *The Rise of the End User in Patent Litigation*, 55 B.C. L. Rev. 1443, 1467 (2014).

<sup>179</sup> 18 U.S.C. § 117(c). See Lateef Mtima, *So Dark the CON(TU) of Man*, 70 U. PITT. L. REV. 1, 23-4 (2008) (“section 117 functions as one of the chief mechanisms through which the public interest in software programs is balanced against the copyright holders’ property rights in such programs.”).

Unfortunately, though, there is another layer in the Copyright Act that is incompatible with the right to repair. Section 1201 of the Copyright Act (the DMCA provisions) prevents anyone from disabling a technological protection measure that a copyright owner has placed on a work in order to protect its copyrighted software (“digital lock”).<sup>180</sup> In practice, almost any type of consumer product includes software, which in turn, likely includes such a digital lock.<sup>181</sup> Consumers cannot disable the digital lock without being liable for violating Section 1201, even if the purpose for such hack was to diagnose, maintain or repair the product. And, if the disabling is done willfully and for commercial gain, the circumventer is criminally liable.<sup>182</sup> Consumer frustration with this interference into their personal autonomy is apparent, in the words of one individual at a public hearing on this issue: “it’s my own damn car, I paid for it, I should be able to repair it or have the person of my choice do it for me.”<sup>183</sup>

Fortunately, Section 1201 provides a safety valve in that it authorizes the U.S. Copyright Office to adopt exemptions to these strict prohibitions. These exemptions are short-term fixes and are only valid for three years, although they can be renewed.<sup>184</sup> With the exemptions announced in 2018, the repair movement scored a victory in persuading the U.S. Copyright Office to officially recognize repair as a reason to circumvent digital locks.<sup>185</sup> The 2018 exemptions, valid until 2021, include exemptions for the circumvention of digital locks that protect access to software, provided that circumvention is done for purposes of repair or maintenance of certain devices on which the software program is embedded.<sup>186</sup> However, the types of devices that these exemptions relate to are limited to “motorized land vehicles,” smartphone, or “home appliance or home system.”<sup>187</sup> Excluded from this are aircrafts and

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<sup>180</sup> 18 U.S.C. §1201.

<sup>181</sup> See, e.g., Kenny, *supra* note 2 (describing the digital lock on newer Keurig coffee machines).

<sup>182</sup> 18 U.S.C. §1204.

<sup>183</sup> U.S. Copyright Off., Section 1201 Rulemaking: Seventh Triennial Proceeding to Determine Exemptions to the Prohibition on Circumvention, Recommendation of the Acting Register of Copyrights, Oct. 2018, at 3.

<sup>184</sup> 18 U.S.C. § 1201.

<sup>185</sup> <https://www.eff.org/deeplinks/2018/10/new-exemptions-dmca-section-1201-are-welcome-dont-go-far-enough>.

<sup>186</sup> <https://www.govinfo.gov/content/pkg/FR-2018-10-26/pdf/2018-23241.pdf>.

<sup>187</sup> <https://www.govinfo.gov/content/pkg/FR-2018-10-26/pdf/2018-23241.pdf> (“Computer programs that are contained in and control the functioning of a lawfully acquired smartphone or home appliance or home system, such as a refrigerator, thermostat, HVAC, or electrical system, when circumvention is a necessary step to allow the diagnosis, maintenance, or repair of such a device or system, and is not accomplished for the purpose of gaining access to other copyrighted works.”)

boats, but included are the increasingly ubiquitous “voice assisted home device” such as Alexa.

While the 2018 exemptions is exciting news for the repair movement and provides individual consumers with greater freedom in this core layer, one of the major downsides is that these exemptions are not permanent. In order for the exemptions to continue beyond the three years, the Copyright Office needs to renew them. There have been times when the Copyright Office decided to not renew a much-needed exemption, such as was the case with the “unlocking” exemption that had been provided from 2006 to 2012 to facilitate connectivity of cellphones.<sup>188</sup> Therefore, this victory for the repair movement may end up being temporary. This Article’s thesis, of course, supports the continuing renewal of this exemption; or, even better, its enactment by Congress.

One other limitation of the repair exemptions is that they do not explicitly authorize consumers to utilize independent repair shops to take advantage of their ability to repair.<sup>189</sup> In fact, the “anti-trafficking” provisions of Section 1201 may be implicated once the broken machine is given to a repair shop, given that repair shops are likely turning to instruction manuals provided online. Trafficking in anti-circumvention information is prohibited and the Copyright Office is not authorized to provide an exemption to them.<sup>190</sup> While the exemption is not restricted, by its terms, to individual consumers,<sup>191</sup> the Copyright Office clarified that “[g]iven the legal uncertainty in this area, services electing to proceed with circumvention activity pursuant to the exemption do so at their peril”.<sup>192</sup> This limitation hampers the ability of consumers to utilize the exemption, as many of us do not have the skill, time, or will to repair our own products. We will discuss this issue further in the next section, where we look at the second circle of activities comprising the right to repair.

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<sup>188</sup> See <https://www.govinfo.gov/content/pkg/FR-2012-10-26/pdf/2012-26308.pdf>. It took an act of Congress to overturn the denial of the exemption. See “Unlocking Consumer Choice and Wireless Competition Act,” <https://www.congress.gov/bill/113th-congress/senate-bill/517/text>.

<sup>189</sup> See U.S. Copyright Office, *supra* note 183, at 222-225.

<sup>190</sup> See discussion *infra* notes 200-201 and accompanying text.

<sup>191</sup> In fact, the 2018 regulation attempted to stay neutral and deleted the term “authorized owner” that was originally included in the proposed exemption as the entity able to take advantage of the exemptions. See U.S. Copyright Off., *supra* note 183, at 225.

<sup>192</sup> *Id.*

### *B. Repair Shops and Diffusion of Repair Information*

The second layer of the right to repair expands it in two different ways. First, in terms of the identity of the persons entitled to repair—this layer would encompass not only consumers, but also independent repair shops. Second, in terms of the type of permitted activities—it includes not only repair, but also advertising repair activities and diffusing repair information through any type of medium (for example, instructional videos on YouTube or posting of instructional manuals on websites).

Admittedly, moving from individual consumers to repair shops weakens some of the policy justifications discussed above—including the autonomy argument and related personality theory justification as well as certain aspects associated with human flourishing discussed under the utilitarian account.<sup>193</sup> However, if consumers are unable to retain the ability to direct repair of their products to someone of their own choosing (an independent repair shop versus an authorized repair vendor), their autonomy is still cabined. In addition, other important considerations supporting the right to repair are still fully valid in this context—including, for instance, the environmental consideration and static and dynamic efficiency considerations discussed above. In fact, regardless of the great value in enabling repair by consumers, it is likely that most of them would rather have their products fixed by professionals. Therefore, in order to promote the policy goals undergirding the right to repair, independent repair shops must be allowed to operate alongside consumers. In addition, enabling activity by independent repair shops has unique social benefits of its own—most importantly, in the economic vitality of the U.S. economy. The repair movement cites that “repair jobs represent 3% of overall employment.”<sup>194</sup>

Once we agree that repair by consumers and repair shops is justified, enabling advertising of repair services and the sharing and diffusion of repair information by consumers and repair shops is clearly justified as well, as these are essential to enable the exercise of the right to repair in a meaningful manner. In terms of incentives to innovate, this layer of the right to repair does not seem to have a potential to detrimentally impact incentives more significantly than the “core” layer discussed above. Once again—enabling repairs does not impact the primary market for any protected intellectual creations embodied in the product. In addition, in this layer, the duty imposed on the original manufacturers still does not include an obligation to perform any affirmative action. Altogether, then, ensuring that

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<sup>193</sup> See *supra* note 147 and accompanying text.

<sup>194</sup> <https://ifixit.org/blog/11951/1201-copyright-final-rule/>.

intellectual property rights do not stand in the way of implementing this layer of the right to repair is undoubtedly justified. Interestingly, this layer of activities too is not addressed as part of the proposed model state legislation, despite the fact that, as with the core circle, intellectual property law—particularly copyright law and trademark law—provides a roadblock to the full exercise of the right.

### (1) Activity of Independent Repair Shops

Independent repair shops undertake a number of different activities that make them vulnerable to claims of intellectual property infringement, beyond actual repair.<sup>195</sup> First, in advertising their services to consumers, many independent repair shops utilize the trademarks of the manufacturers. For example, many independent repair shops use the lowercase “i” to designate that they fix iPhones or other Apple products. Others, like iPad Rehab, use the trademark in the name of the business themselves. Another method of advertising is to utilize the trademarks in the description of the business. If they do not do so or were not able to do so, how would consumers know that they could bring their products to the independent repair shop? If trademark law could be used to prevent this form of commercial speech, competition for repair services would be slim to none.

Fortunately, trademark law already recognizes the need to carve out a space where trademarks are used by third parties to advertise, in order to combat potentially anti-competitive behavior by trademark owners. Courts have developed the doctrine of “nominative fair use,” under which third parties are able to utilize trademarks to the extent necessary in order to communicate information regarding their businesses to consumers. In *Smith v. Chanel*, the Ninth Circuit case that first originated this theory of trademark nominative fair use, the defendant was found to have made a non-infringing use of Chanel’s Coco No. 5 mark.<sup>196</sup> In this case, the defendant had used only the word mark (as opposed to the stylistic mark) of Chanel in order to advertise to consumers that his perfume was the same as Chanel’s. This standard has become widespread, and courts have routinely held that the use of word marks of original manufacturers in similar contexts—including by repair shops and parts resellers—are non-infringing uses.<sup>197</sup> The problem remains, though, when manufacturers still attempt to enforce their trademark in these situations. Independent repair shops, particularly the smaller-sized

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<sup>195</sup> With respect to the activity of repair itself, the discussion in Part III.A. does not change much once expanding the privilege to repair patented products from the consumers themselves to repair shops.

<sup>196</sup> *R.G. Smith v. Chanel, Inc.*, 402 F.2d 562 (9<sup>th</sup> Cir. 1968).

<sup>197</sup> <https://www.ipwatchdog.com/2018/09/19/oem-trademarks-aftermarket-exploring-boundaries/id=101163/>.

ones, or the sole proprietors, are likely to be similarly situated to consumers in terms of resources to fight back, as well as in legal knowledge (meaning that they are unlikely to know that these types of claims are not grounded in the current interpretation of trademark law). Therefore, there is still a need for some type of legal clarity, which can come in the form of state law, such as in an “abusive threats” type of action for which one of us has previously advocated.<sup>198</sup>

Notably, where repair shops and resellers use the actual logo of the original manufacturer, courts are more apt to find trademark infringement. In today’s image-heavy world, it is not entirely clear that the use of a manufacturer’s logo is not essential to compete effectively with authorized repair shops. We will leave the debate of this issue for another day, given that the use of logos does not appear absolutely essential to effectively competing in the repair market.<sup>199</sup>

## (2) Diffusion of Information

Another activity that repair shops and proponents of the right to repair undertake is the diffusion of information on how to repair, including how to disable security locks and reset them. Unfortunately, Section 1201 acts as a roadblock to the right to repair in this context as well, by restricting the ability to freely post content online and otherwise distribute information related to disabling digital locks, while in this instance—it does so without any safety valves. Sections 1201(a)(2) and 1201(b) (the “anti-trafficking” provisions) prohibit the distribution of information that explains to others how to disable a digital lock. In addition, the distributor is exposed to criminal liability, if it was done willfully and for commercial gain. In its announcement of the Section 1201 exemptions, the Copyright Office was explicit that they were not authorized to provide any exemptions from 1201(a)(2) or 1201(b).<sup>200</sup> This inability to officially authorize exemptions from the distribution of information

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<sup>198</sup> See Grinvald, *supra* note 169.

<sup>199</sup> There is also the issue of when a repair shop or other e-recycler can utilize the trademark on the repaired product. For the most part, trademark law recognizes the right to use the original trademark in these instances, up until the point where the product is so extensively reconditioned that it is materially different from the original product. See, e.g., Nitro Leisure Products, L.L.C. v. Acushnet Co., 341 F.3d 1356 (Fed. Cir. 2003).

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[https://www.copyright.gov/1201/2018/2018\\_Section\\_1201\\_Acting\\_Registers\\_Recommendation.pdf](https://www.copyright.gov/1201/2018/2018_Section_1201_Acting_Registers_Recommendation.pdf) at 5, (“The anti-trafficking provisions provide vital protections to copyright owners, and Congress did not authorize the Librarian to grant exemptions from them.”).

provisions of the DMCA means that consumers or independent repair shops can undertake repairs, but cannot share the information of how to do so.<sup>201</sup>

The Copyright Office acknowledged that this is a significant concern.<sup>202</sup> Unfortunately for the repair movement, Congress is the only body of government that could revise the law to provide for an exemption from the DMCA anti-trafficking provisions that would cover the activity of independent repair shops even if they use online manuals.<sup>203</sup> Such legislation has been introduced in the past, and the repair movement's goal is that there will be momentum to enact it in future years.<sup>204</sup> This Article's thesis supports this direction.

Notwithstanding all of this, Section 107 of the Copyright Act (the "fair use" provision) does recognize that there are certain uses of copyrighted works that should be considered as noninfringing.<sup>205</sup> The diffusion of information regarding repairs, even if it incorporates copyrighted material, provided that such material is not related to the disabling of a digital lock, is on firmer legal grounds. For example, iFixit routinely creates their own instructional videos on how to fix the hardware of electronic products. The problem for smaller independent repair shops is that relying on fair use provides cold comfort because manufacturers can still claim that the repair shop's distribution of materials does not qualify as fair use. As mentioned above, these claims typically come in the form of cease-and-desist letters, and if the repair shop decides to not cease and desist, they open themselves up to expensive and lengthy litigation. What happens in the majority of copyright infringement

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<sup>201</sup> <https://ifixit.org/blog/11951/1201-copyright-final-rule/>.

<sup>202</sup> U.S. Copyright Office, *supra* note 183, at 5 ("In this proceeding, proponents of the vehicle repair exemption again request provision for third-party assistance, arguing that limiting the exemption to individual owners threatens to render it effectively meaningless for those who lack the technical knowledge to access and manipulate increasingly complex embedded computer systems. The Acting Register is sympathetic to these concerns and has attempted to draft the exemption language in a manner that accommodates such assistance to the extent it does not implicate the anti-trafficking provisions.") In addition, the Acting Register recommends removing the current exemption language requiring that circumvention be "undertaken by the authorized owner." *Id.* at 224. While the statutory language is far from clear, and the courts have yet to address this issue, there is at least a plausible argument that some forms of third-party assistance involving circumvention will not rise to the level of a prohibited "service" in all instances.

<sup>203</sup> See U.S. Copyright Office, *supra* note 183, at 5 ("[t]he Office continues to believe that legislation permitting third-party assistance in appropriate circumstances would benefit stakeholders and provide valuable clarity to the overall statutory scheme.").

<sup>204</sup> <https://ifixit.org/blog/11951/1201-copyright-final-rule/>;  
<https://www.congress.gov/bill/114th-congress/house-bill/1587/text>.

<sup>205</sup> See U.S. Copyright Office, More Information on Fair Use, <https://www.copyright.gov/fair-use/more-info.html>.

claims is that the target (here, the repair shops) simply accedes to the demands (here, the manufacturers) due to the uncertainty involved in fair use determination and because it is too expensive and emotionally draining to do otherwise. Therefore, unless action is taken at the federal level to amend the DMCA,<sup>206</sup> it is likely that the diffusion of information regarding how to repair will be limited and only undertaken by those who are less risk-averse regarding the potential of being targeted by litigation.<sup>207</sup>

### *C. Enabling Competition in the Market for Replacement Parts*

The third layer of the right to repair is the right to make, sell and use replacement parts in competition with the original equipment manufacturer. Repairing a product often entails the need to replace certain parts or components. Thus, consumers and independent repair shops must have access to replacement parts. In order to maintain a competitive repair market, the market for replacement parts should also be open for competition. Absent such competition, consumers and repair shop owners will be dependent on supply of replacement parts by the original manufacturer.

Even if the original manufacturer supplies replacement parts in the market, monopolistic pricing of such parts, on its behalf, may result in consumers avoiding repairs altogether or using non-matching replacement parts (i.e., replacement parts that are materially different than the original ones) in order not to spend the high costs of original parts. As to consumers who would choose to have original parts used in repairing their products despite the high cost—if such parts are only supplied by the original manufacturer, many of them are then forced to use the repair services of the original manufacturer or its authorized agents, even if they might have otherwise chosen its competitors. The competitive advantage of independent businesses would almost certainly erode if they cannot offer replacement parts for their repair services. In addition, there may also be cases where replacement parts are not even offered for sale in the free market. In such cases, consumers surely have no other option other than having their products repaired by the original manufacturer.

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<sup>206</sup> See, e.g., AARON PERZANOWSKI & JASON SCHULTZ, THE END OF OWNERSHIP: PERSONAL PROPERTY IN THE DIGITAL ECONOMY 176-77; Repair.org, Advocacy, Fix the DMCA, <https://repair.org/copyright/>.

<sup>207</sup> See, e.g., Universal City Studios, Inc. v. Corley. For example, iFixit hosts user-generated how-to guides, including those related to software. See, e.g., <https://www.ifixit.com/Guide/How+to+install+macOS+Mojave+on+Unsupported+Mac/115162>.

Altogether, then, the right to repair can only be implemented effectively if original manufacturers do not control replacement parts markets. As further discussed below, we believe that opening the market for repair parts to competition does not deprive original manufacturers of legitimate profits that are necessary to incentivize them to develop new products. Furthermore, in respect to this circle of activities as well, manufacturers are under no duty to perform any affirmative action.

Interestingly, this aspect too is not addressed in the proposed right-to-repair legislation, which focuses on the duty of the original equipment manufacturer to make parts available on fair and reasonable terms. This may have to do with an assumption that many of the problems in the replacement parts market takes place in the car industry, while the model legislation exempts from its scope motor vehicles. Competition in the market for replacement parts is considered vital in the cars industry given the ubiquity of car accidents. Nevertheless, problems exist, and opening the market for repair parts to competition is no less important, in non-automobile replacement parts markets too. As detailed below, trademark law, in particular, is routinely used as a sword to prevent competition in the replacement parts market, regardless of the industry.

Notably, under the proposed state legislation, an original equipment manufacturer is under no obligation to supply a part if such part is no longer available to it. Thus, upon its unilateral decision, the original manufacturer may stop supplying parts for a certain product—for instance, when warranty for all units sold expires and later models are available. In such a case, the manufacturer's duty to supply parts under the proposed legislation would fade away. This reinforces the importance of enabling competition in markets for replacement parts. Manufacturers, both in the car industry and in other industries, should not be allowed to resort to patent law or trademark law to forestall competitors from producing and selling competitive replacement parts. We address both areas below, first patent law, and then trademark law.<sup>208</sup>

### (1) Patented Replacement Parts

Courts dealing with the patent exhaustion doctrine have clarified that repair may entail the replacement of spent elements, and yet—still be permissible.<sup>209</sup> However, the situation changes when the replacement part

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<sup>208</sup> While copyright law could also be implicated by attempting to provide a space for competitive replacement parts, the concerns are more theoretical in nature, and have not been raised in actual arguments.

<sup>209</sup> In *Aro*, *supra* note 161, the defendant replaced the worn-out fabric of the patentable convertible top on his car and the Supreme Court classified it as a

itself is protected by a utility or design patent. Even though the sale of the product exhausts the rights of the patentee with respect to every patented part embedded in the product,<sup>210</sup> exhaustion does not permit the purchaser to make additional copies of patented items.<sup>211</sup> Thus, when parts are protected by patents, if they need to be replaced in the course of repair, it is only the patent holder who can make and supply them.<sup>212</sup> Registration of a patent over a part of a product could, thus, be used to circumvent the application of the exhaustive doctrine that would otherwise sanction repair of the product.<sup>213</sup>

Unfortunately, this is not a mere theoretical concern. In recent decades, there has been an increase in grants of design patents to original equipment

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permissible repair. See also Sarnoff, *supra* note 23 (“The consumer repair right [under the patent exhaustion doctrine] is very broad. It includes restoring or rebuilding damaged original parts, as well as substituting new replacement parts.”).

<sup>210</sup> While the exhaustion doctrine has been developed in the context of utility patents, it is most likely applicable to the exact same extent with respect to design patents as well. 35 U.S.C. § 171 (b) clarifies that “[t]he provisions of this title relating to patents for inventions shall apply to patents for designs, except as otherwise provided.” Admittedly, § 171 (b) refers to the provisions of the statute, whereas the doctrine of patent exhaustion is entirely judge-made. Yet, absent case law that provides otherwise, it is likely that such a major patent law doctrine that has been developed in cases dealing with utility patents is also applicable in the context of design patents. Most importantly, the policy considerations that underlie the exhaustion doctrine, including the desire to accommodate free use and alienability of patented goods released into the stream of commerce, are equally applicable in both contexts. For a recent case supporting this conclusion, see *Automotive Body Parts Association v. Ford Global Technologies, LLC* (E.D. Mich., 2018) (explaining that “[t]here is no case dividing patent law this way—i.e., creating separate exhaustion doctrines for utility and design patents”).

<sup>211</sup> See, e.g., *Bowman v. Monsanto Co.*, 569 U.S. 278, 284 (2013) (clarifying that “the doctrine restricts a patentee’s rights only as to the “particular article” sold; it leaves untouched the patentee’s ability to prevent a buyer from making new copies of the patented item”) (citation omitted). See also Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 CALIF. L. REV. 1, 31 (2001) (“The patentee retains the rights to prevent anyone else, including the buyer, from making, using, or selling additional copies of the patented item.”); Rinehart, *supra* note 93, at 535 n.4 (“Under current law, the patent owner retains his right to exclude purchasers of the articles from making the patented invention anew.”).

<sup>212</sup> One of the arguments brought up in *Automotive Body Parts Association v. Ford Global Technologies, supra*, was that design patents over components of a larger product are exhausted upon the first authorized sale of such a product. The court rejected this argument while refusing to formulate a special exhaustion doctrine in design law that would be different than the one employed in the context of utility patents.

<sup>213</sup> See Sarnoff, *supra* note 23 (“Partial product and fragment design patents effectively override the exhaustion doctrine ... by prohibiting refurbishment or new manufacture of parts that would be used to repair the overall products.”).

manufacturers for components of their products.<sup>214</sup> This practice has risen since 1980, following the *Zhan* case, where the Court of Customs and Patent Appeals held that even fragments of parts of products can be protected by design patents.<sup>215</sup> Patents are not only granted—they are also successfully asserted in litigation. This practice has attracted criticism in connection with motor vehicles, where, as stated above, replacement parts (such as doors, headlights, bumpers etc.) are often needed to repair a car that was damaged in a collision.<sup>216</sup> The growth in registrations of such partial-product exterior design patents has accelerated since 2005.<sup>217</sup> In response to this, a bipartisan group of lawmakers reintroduced a bill for the “Promoting Automotive Repair, Trade and Sales Act (the “PARTS Act”) of 2017” in Congress.<sup>218</sup> The PARTS Act would create a narrow exception from design patent infringement for collision repair parts for cars.<sup>219</sup>

The Article’s analysis supports this proposed legislative move. An alternative course of action is to avoid granting patents over repair parts to begin with. This measure, which may seem more radical, could perhaps be implemented without the need to amend the Patent Act.

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<sup>214</sup> See Sarnoff, *supra* note 23 (noting the growing practice of granting to and assertion by OEMs of partial-product design patents for repair parts).

<sup>215</sup> Application of Zahn, 617 F.2d 261 (C.C.P.A. 1980). See Sarnoff, *supra* note 23 (noting the CCPA “revised the common and widespread understanding that design patents were limited to the entire appearance of entire products”).

<sup>216</sup> See, e.g., Sarnoff, *supra* note 23 (noting that the practice of granting and asserting partial product design patents “effectively overrides” the right to repair pursuant to the exhaustion doctrine); Dennis Crouch, *Design Patents and Replacement Parts*, PATENTLYO (March 22, 2010) (noting that “many automobile body parts are protected through design patent” and “[t]his allows the original manufacturers control over the repair-parts market as well”). Surely, design patents for small parts of larger products were registered and asserted in other industries as well. For examples, see Sarah Burstein, *Costly Designs*, 77 OHIO ST. L.J. 107, 123 (2016).

<sup>217</sup> *Disturbing Trend: Collision Repair Part Design Patents Granted*, [http://www.keepautopartsaffordable.org/sites/all/themes/framework/pdf\\_resource/design\\_patents\\_on\\_collision\\_repair\\_parts\\_2017-04.pdf](http://www.keepautopartsaffordable.org/sites/all/themes/framework/pdf_resource/design_patents_on_collision_repair_parts_2017-04.pdf) (a graph showing a significant increase in the number of design patents on collision repair parts from 2005 to 2015).

<sup>218</sup> S. 812 and H.R. 1879, 115<sup>th</sup> Congress. Similar legislation was introduced in the 114<sup>th</sup> Congress (S. 560 and H.R. 1050). See <http://www.keepautopartsaffordable.org/>.

<sup>219</sup> The bill proposes to reduce the period during which car companies can enforce their design patents against sellers or users of such parts from 15 years to 30 months from the date the car is first placed on the market. Alternative suppliers could manufacture, test and import such components for legitimate repairs even during such 30-month period, without it being considered infringing.

Two arguments could be made under the current statutory scheme that supports the exclusion of partial-product design patents.<sup>220</sup> The first argument is that partial products do not qualify at all as statutory subject matter for design protection. Pursuant to 35 U.S.C. § 171(a), patent protection can only be awarded to a “design for an article of manufacture”.<sup>221</sup> Arguably, a component of a larger product, which is never sold to be used by itself and its only value is for restoring the original appearance of such larger product, should not be considered an “article of manufacture” for purposes of the Act.<sup>222</sup>

The second argument could be that the design of a partial product is not ornamental, as required by the Act.<sup>223</sup> This is clearly the case when it comes to designs for internal parts of a product, which no one buys because of their appearance.<sup>224</sup> Yet, it can also be true with respect to exterior parts. The claim that partial product designs lack ornamentality was recently made by the Automotive Body Part Association (“ABPA”) in litigation against Ford.<sup>225</sup> The District Court for the Eastern District of Michigan rejected the claim.<sup>226</sup> ABPA argued that when a car is damaged, its owner simply wants parts that would restore the car to its original look. As consumers that seek to repair their vehicles do not select parts for their design, the design is not a “matter of concern” and does not deserve patent protection. The Court rejected this

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<sup>220</sup> See generally Sarnoff, *supra* note 23 (arguing that Congress has never authorized such patents).

<sup>221</sup> 35 U.S.C. § 171(a).

<sup>222</sup> See Sarnoff, *supra* note 23 (noting that Congress has authorized design patents only for the overall appearance of “articles of manufacture” and not for parts of such articles, and explaining that “[t]his is because ornamental designs for functional products are perceived in their entirety as part of the overall functional products that they help to form”). See also Sarah Burstein, *The Patented Design*, 83 *Tenn. L. Rev.* 161, 207-08 (2015) (noting that the patented design should be conceptualized as the design as applied to a particular type of product, while defining product as “something sold by an enterprise to its customers”). While parts could be sold in the marketplace separately from the entire products they comprise, if this is only done when needed to repair the larger product, such parts should not be considered “articles of manufacture”.

<sup>223</sup> The requirement that a design would be ornamental is stated in 35 U.S.C. § 171(a): “Whoever invents any new, original and ornamental design for an article of manufacture may obtain a patent therefor, subject to the conditions and requirements of this title.”).

<sup>224</sup> See Burstein, *supra* note 216, at 135 (“No one buys a tractor because of the appearance of its internal gears”).

<sup>225</sup> An alternative argument raised by ABPA was that the patents in question are unenforceable because the patent rights are exhausted upon the first authorized sale of the vehicle. This argument was rejected by the court for reasons explored above.

<sup>226</sup> ABPA filed a notice of appeal on the judgment.

argument, noting that the “matter of concern” inquiry is not necessarily constrained to the perspective of a vehicle owner at the time that she is buying a replacement part, as opposed to the time she initially buys the car. ABPA argued, in addition, that as part of the ornamentality requirement, a design for an article of manufacture cannot be solely dictated by the function of the article; and designs of body parts are dictated by the need to both physically fit onto the car and match its overall aesthetic.<sup>227</sup> The Court rejected this argument as well, while refusing to import the aesthetic-functionality doctrine from trademark law to design law.<sup>228</sup>

We are not convinced that the Court was right in rejecting ABPA’s non-ornamentality claim. A detailed analysis of the arguments made in this litigation exceeds the scope of this Article, but two interrelated observations are in order. First, the fact that parts are not sold as separate items in the market other than for purposes of repair seems to be a relevant factor in the inquiry, and we are not sure that the Court accorded it sufficient weight. Second, it is not clear that in interpreting the law, due regard was given to the underlying policy considerations. In addition to the policy arguments made above in support of competition in repair parts markets, protection for repair parts simply does not promote the decorative arts or provide other public benefits. The original manufacturers have a strong incentive to develop new designs for their products in order to impact buyers to choose them over the alternatives at the purchase stage.<sup>229</sup> Moreover, once a design for a product is disclosed to the public, so is the design of each one of its parts. Altogether, then, independent design protection to parts, on top of the protection for the design of the entire product, “provides nothing more to the public—it merely provides a windfall to the [product]’s manufacturer”.<sup>230</sup> Such protection, which results in increased prices and insurance premiums, comes at the expense of consumers, who have already paid “patented prices” when they purchased their original products.<sup>231</sup> If removing design protection from components of larger products does not impact incentives,

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<sup>227</sup> See, in the United Kingdom, Section 7A(5) of the Registered Designs Act (providing that the right in a registered design of a component part which may be used for the purpose of the repair of a complex product so as to restore its original appearance is not infringed by the use for that purpose of any design protected by the registration).

<sup>228</sup> The claim that the designs are dictated by their need to physically fit the car was rejected on a factual basis, as there is a pool of available designs that can fit.

<sup>229</sup> See Sarnoff, *supra* note 23 (noting that “patent law provides its incentives to produce improved designs, through the first sale of the entire purchased product that embodies a partial-product or fragment design patent”).

<sup>230</sup> See Burstein, *supra* note 216, at 137 (noting that design patents for repair parts are undoubtedly valuable to their owners but have low or negative social value).

<sup>231</sup> See Sarnoff, *supra* note 23.

then this is surely the case with respect to a solution along the lines of the PARTS Act that allows registering designs over partial products and only limits the possibility of enforcing them against independent suppliers of parts or parties that use them for legitimate repairs. Under such a legal regime, the owner of a design patent can still assert it against competitors who incorporate this design into new products they produce.

## (2) Trademark Law Implications

Like their overuse of patent law, manufacturers have also overused trademark law in order to protect replacement parts, which can have similarly stifling effects on competition for such parts or for repair services. This occurs where manufacturers obtain trademarks on parts themselves, like with grilles on the front of a vehicle.<sup>232</sup> Another use of trademark law to stifle competition in the repair market is the practice of claiming that refurbished replacement parts are counterfeit when they are actually authentic parts.

*Repair parts as registered trademarks.* In the instances where manufacturers have obtained trademarks on parts of products, we make a recommendation similar to where design patents cover a product's part: simply do not grant the trademark. Product parts are considered product configurations and in order to be registered as trademarks, they require evidence proving that consumers are viewing the product part as a source indicator (and not simply a car part).<sup>233</sup> Based on a review of the office actions for Ford's grille design and Volvo's back tail light design, trademark examiners already appear to be skeptical of claims to a product's part distinctiveness as a trademark and lack of functionality. As the document files of these two trademark registrations indicate, the trademark examiners initially reject the applications. Unfortunately, however, in both instances, the trademarks were eventually granted after a lengthy back and forth between the manufacturers and the trademark examiners. While it is unclear how often the manufacturers enforce their registered trademarks against makers of compatible products, it is clear that some are doing so.<sup>234</sup> If successful, manufacturers can claim exclusivity over a replacement part for as long as the manufacturer continues to use the part. Further, having a registered trademark in a product part assists the manufacturers in keeping competitive

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<sup>232</sup> See, e.g., Registration No. 3453754 (Ford Motor Company registration for the design of an automobile grille); Registration No. 3440628 (Volvo Car Corporation registration for the design of car tail lights) (cancelled due to lack of renewal).

<sup>233</sup> In trademark law parlance, this is called "acquired distinctiveness." Product configurations fall into the category of requiring proof of acquired distinctiveness. See *Wal-Mart v. Samara Bros.*, 529 U.S. 205 (2000).

<sup>234</sup> See, e.g., *Chrysler Corp. v. Vanzant*, 44 F. Supp. 1062, 1071-1072 (C.D. Cal. 1999).

look-alike parts from entering the country through the use of the U.S. Customs and Border Patrol (“CBP”) as discussed next.

*Claiming that Refurbished Parts are Counterfeit Goods.* Trademark law is also utilized to exclude from importation into the U.S. replacement parts that contain manufacturers’ trademarks or appear similar to the part that is registered as a trademark. In these instances, it is the government that is enforcing the trademark on behalf of the manufacturers, but it is no less problematic for the repair industry. For example, LKQ Corporation, an automobile parts supplier, has routinely had its replacement parts seized at the U.S. border by the CBP because the CBP declares that its parts are counterfeit. LKQ recently filed a lawsuit against the Department of Homeland Security (the division that oversees the CBP), arguing that these seizures, which negatively impact its business, are being made on an incorrect application of trademark law.<sup>235</sup> Notably, the replacement parts that LKQ is importing are not counterfeit goods—LKQ is not attempting to pass off their parts as those of the manufacturers.<sup>236</sup>

The same has happened to independent repair shops who import refurbished replacement products that bear the original trademark. Refurbished replacement products are also not counterfeit goods, but are authentic goods that have been previously sold, and then repaired to extend their utility. The U.S. Supreme Court has held that refurbished parts or products, to the extent that they do not mislead consumers into thinking they are new and original, are acceptable uses of another’s trademark. Unfortunately though, this has not stopped the CBP in detaining such products at the border. And even after such seizures occur, the manufacturers are seemingly not educating the CBP that the seized products are not counterfeit.<sup>237</sup> In these instances, if manufacturers were not granted registered trademarks on product parts, the CBP would likely not seize similar-looking imported parts. In any event, a practical approach to resolving this particular issue, as long as such trademarks are being registered, would be for the CBP to not seize replacement parts that are being imported for the purpose of repair. Instead, the CBP should ask the importer to provide evidence that the intended use for such parts is repair. If such evidence is

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<sup>235</sup> <https://www.law360.com/articles/1010399/auto-parts-supplier-sues-cbp-for-seizing-lawful-parts>.

<sup>236</sup> <https://www.law360.com/articles/1010399/auto-parts-supplier-sues-cbp-for-seizing-lawful-parts>.

<sup>237</sup> [https://motherboard.vice.com/en\\_us/article/evk4wk/dhs-seizes-iphone-screens-jessa-jones](https://motherboard.vice.com/en_us/article/evk4wk/dhs-seizes-iphone-screens-jessa-jones) (citing a CBP public affairs officer who related that the normal process after an initial detention by the CBP is to check with the trademark owners to confirm whether the goods are counterfeit).

given, then the CBP should release the shipment to the importer without the importer having to pay a fee.

#### *D. Mandating Disclosure of Repair Information and Supply of Replacement Parts*

The fourth circle deals with certain affirmative duties that should be placed on original manufacturers in order to ensure an effective implementation of the right to repair. This is, perhaps, the most controversial component of the right to repair, and is the focus of the model state legislation. As discussed above, under section 3(a) of the proposed model legislation, “an original equipment manufacturer shall make available, for purposes of diagnosis, maintenance, or repair . . . on fair and reasonable terms, documentation, parts, and tools, inclusive of any updates to information or embedded software”. The reason this provision is controversial is that it takes us into the realm of mandating affirmative action on the part of manufacturers, where these affirmative actions could run counter to their intellectual property rights. The question is whether the legislation, assuming it would pass, is sufficient or is there a need to make a provision for these legal measures in intellectual property law as well. This section will examine this question—first, with respect to replacement parts, and then with respect to repair information.

##### (1) Replacement Parts

To the extent the measures proposed in Section C are not implemented in full—i.e., repair parts are not excluded from patent (utility or design) or trademark protection and there is no exemption from infringement liability for alternative parts providers—then there is a risk that the supply of parts would not be sufficient to meet demand, and the parts that are supplied would not be offered at competitive prices. This is where the proposal included in the model state legislation becomes relevant. As noted above, the proposed bill would impose a duty on the original manufacturer to make parts available on fair and reasonable terms, so long as such parts are available to it.<sup>238</sup> This proposal is drafted very broadly, without regard to whether the parts are protected by patents or trademarks. We actually think that this provision could be limited to parts that are subject to patent or trademark protection, as in other cases—parts could be manufactured by alternative suppliers.

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<sup>238</sup> Section 3(a) (“Nothing in this Section requires an original equipment manufacturer to make available a part if the part is no longer available to the original equipment manufacturer.”).

In any event, this proposed provision is not consistent with the basic notions of patent law, which does not interfere, as a general matter, with the patentee's decision whether to "work" the invention or not. In fact, we do not support imposing on a manufacturer a duty to manufacture and supply parts, other than perhaps as part of an expanded scheme of mandatory warranty. Thus, we think the "duty to supply" in the legislation must be construed broadly, so that it would be sufficient that the patentee licenses others to supply parts if it does not wish to do it on its own. Yet, patent law does not even interfere in a patentee's decision whether to license others to use the invention or not. In order to bridge the gap between the proposed legislation and federal patent law in these situations, implementing a regime of compulsory licenses could perhaps be beneficial. Unfortunately, though, the United States has been, for many years, a vigorous opponent of compulsory licenses in patent law.<sup>239</sup> This is not likely to change in the near future, and thus, the prospect of implementing this measure is rather slim. An alternative measure, which does not require an amendment of the statute or affirmative government action, is through the courts using their discretion under *ebay, Inc. v. MercExchange, LLC* to avoid granting injunctions in infringement actions against alternative parts providers or users.<sup>240</sup> While this involves litigation, it could offer quicker relief—and thus, facilitate continuous supply of parts (as long as there are licensees that are willing to make it)—if a court were more apt to deny injunctions at the preliminary stage of a lawsuit.

In contrast to patent law, if the replacement part is protected by a trademark, the manufacturer is required to continue using the mark in commerce. This means that the manufacturer is required to make the products that include the part, otherwise, the manufacturer will lose the trademark. In this situation

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<sup>239</sup> See *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 215 n.21 (1980) (noting that "[c]ompulsory licensing of patents often has been proposed, but it has never been enacted on a broad scale"); WILLIAM CORNISH & DAVID LLEWELYN, *INTELLECTUAL PROPERTY: PATENTS, COPYRIGHT, TRADE MARKS AND ALLIED RIGHTS* 296 (6TH ED. 2007) (noting the hostility of the U.S. with respect to compulsory licensing); John H. Barton, *Patents and Antitrust: A Rethinking in Light of Patent Breadth and Sequential Innovation*, 65 *ANTITRUST* 449, 458 (1996) (noting that the idea of compulsory licensing is strongly opposed in the U.S.); Howard F. Chang, *Patent Scope, Antitrust Policy, and Cumulative Innovation*, 26 *RAND J. ECON.* 34, 43 n.18 (1995) (noting that compulsory licensing "remains disfavored in patent law"); Donna M. Gitter, *International Conflicts over Patenting Human DNA Sequences in the United States and the European Union: An Argument for Compulsory Licensing and a Fair-Use Exemption*, 76 *N.Y.U. L. REV.* 1623, 1681 (2001) (describing the "traditional antipathy in U.S. law toward any incursions on a patentholder's monopoly"). Nevertheless, there are a few concrete compulsory license arrangements in various contexts, for example, with respect to the exploitation of certain inventions in the field of atomic energy, see 42 U.S.C. § 2183 (2006).

<sup>240</sup> *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006).

(and the situation where the manufacturer continues to make patented replacement parts), then, the state legislation could be quite helpful to compel manufacturers, on anti-competitive and consumer protection grounds, to make their parts available to independent repair shops and consumers on a reasonable basis.

## (2) Information

The federal and state governments mandate disclosure of information on a routine basis, particularly where there are concerns of unfair competitive or deceptive practices, or on grounds of consumer protection. For example, securities laws mandates disclosure of certain information when offering any type of investment to the public.<sup>241</sup> Another example, more relevant to the model right to repair legislation, is the Massachusetts Automotive Repair Law, which requires all motor vehicle manufacturers (who sell their cars in the state) to provide on the same basis, the same diagnostic and repair information to owners and independent repair shops (for a reasonable price).

The biggest roadblock here, in terms of intellectual property law, is trade secret law. Trade secrets are a body of independent economically-valuable information that an entity or individual has kept secret. Trade secret law is unique from other intellectual property laws in that until recently, their protection relied solely on state law.<sup>242</sup> In 2016, the Defend Trade Secrets Act was enacted into law, but it does not preempt or displace state law.<sup>243</sup> This means that state-based definitions (either through legislation or through judicial interpretation) as to what is considered a trade secret can continue to co-exist with a federal definition.<sup>244</sup>

The implications of trade secret law are directly acknowledged by the model legislation in Section 5(a), according to which: “Nothing in this Act shall be construed to require an original equipment manufacturer to divulge a trade secret to an owner or an independent service provider except as necessary

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<sup>241</sup> See [https://www.sec.gov/oiea/investor-alerts-bulletins/ib\\_crowdfunding-.html](https://www.sec.gov/oiea/investor-alerts-bulletins/ib_crowdfunding-.html) (crowdfunding requirements).

<sup>242</sup> Sharon K. Sandeen & Christopher B. Seaman, *Toward a Federal Jurisprudence of Trade Secret Law*, 32 BERKELEY TECH. L.J. 829, 832 (2017) (“The May 11, 2016 enactment of the DTSA created a federal civil cause of action for trade secret misappropriation for the first time. For over 175 years, state law governed civil trade secret principles in the United States.”).

<sup>243</sup> 18 U.S.C. § 1838.

<sup>244</sup> Sandeen & Seaman, *supra* note 242, at 905 (noting that on its face, the federal definition appears to be more narrow in how it defines “information”).

to provide documentation, parts, and tools on fair and reasonable terms.”<sup>245</sup> This language appears to carve out from the definition of a trade secret that which is related to diagnostic, maintenance, or repair. Therefore, if states were to adopt this language, it would appear to modify trade secret law. It may not be surprising, then, that many of the proposed bills do not adopt this carve-out, instead choosing to simply state, “Nothing in this Act shall be construed to require an original equipment manufacturer to divulge a trade secret” (or similar language to this effect). While the lack of a carve-out may make the proposed law more politically palatable, it does draw into question whether manufacturers can simply decide to not disclose pertinent repair information based on their classification as a trade secret. This would provide a significant loophole to the effectiveness of these laws. While there have been no official claims of such situations occurring under motor vehicle right to repair laws, such as the Massachusetts Automotive Repair Law, allegations of such actions has spurred a handful of legislators to introduce amendments to the law in Massachusetts.<sup>246</sup>

Therefore, even if states were successful in passing any such laws in the coming years, the deletion of any carve-out for repair information as a trade secret would appear to provide a significant loophole to manufacturers. The straight-forward way to resolve this would be to adopt the model legislation language regarding trade secrets, or to delete the exemption of trade secrets altogether, as California has done. If the language regarding trade secrets needs to remain as-is in order for the states to pass the law, another way states could prevent the abuse of manufacturers using this loophole is to provide the ability to differing levels of government to impose civil liabilities on manufacturers who knowingly violate the law. For example, the proposed repair law in California would provide city, county, or state governments to impose an increasingly higher amount of civil fines on a daily basis per infraction.<sup>247</sup> This would increase the likelihood that action would be taken against manufacturers who attempt to skirt the law.

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<sup>245</sup> REPAIR.ORG, LEGISLATIVE TEMPLATE, *supra* note 16. In addition, the Massachusetts Automotive Repair Law also excludes from its reach that which manufacturers claim to be a trade secret.

<sup>246</sup> <https://www.metrowestdailynews.com/news/20180918/bill-filed-to-prevent-skirting-right-to-repair-law>; HD 5153 (“An Act to enhance, update and protect the 2013 Motor Vehicle Right to Repair Law and Consumer Rights”) (bill text not available as of Dec. 25, 2018).

<sup>247</sup> Some other proposed bills also include civil penalties that range from \$500 to \$5,000 per violation, but authorize only the state attorney general to take action. As one of us has argued in a previous article, it may be difficult to obtain assistance from the state attorney general, unless one was able to bring complaints from a large number of repair shops in that particular state. See Grinvald, *supra* note 169.

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In summary, our exploration of intellectual property law has shown that it could prevent an effective state-based right to repair law from being implemented. The good news is that this could be fixed by a combination of certain modifications of the proposed state laws and some intellectual property rules and doctrines. On the state legislation level, our recommendations include adding in more expansive contract law provisions into the proposed repair law bills. Language that would declare void and unenforceable contractual provisions between the manufacturer and consumer that purport to infringe on a consumer's ability to repair her product would go a long way to assist the repair movement. Further, while trade secret law can provide a barrier to provisions requiring manufacturers to release information regarding repairs, states can utilize methods to counter-balance the likely tendency of manufacturers to find loopholes.

Where states are not able to legislate, we have also made some recommendations in this Part regarding ways in which the courts and the federal government can assist in the efforts to make a right to repair effectively realized. These included repair-friendly interpretations of patent and trademark law doctrines, such as to default in favor of repair in close cases of repair versus reconstruction, or not allow intellectual property owners to assert design patents over replacement parts or trademarks against those who are using them for repair purposes. We also join in the repair movement's push to "fix the DMCA" by removing the provisions around circumventing digital locks (and in particular, the provisions that make transmission of relevant information illegal). Ultimately, in addition to the steps recommended throughout this Part III, we would urge Congress to adopt legislation that would provide for a right to repair on a national level.

#### IV. POTENTIAL CRITICISM

Before concluding, we attempt to address in this Part IV a few of the potential lines of criticism against our proposal to stop intellectual property law from sabotaging the right to repair. Concerns regarding the quality of repair and an increase in counterfeiting or piracy are drawn directly from arguments made by opponents to the repair movement. We also address a potential criticism related to the economic loss for the original manufacturers with an effective right to repair in place. While the concern of lower levels of profit likely underlies much of the impetus for the opponents, it does not appear to ever be directly addressed (except by proponents of the right to repair) and we attempt to do so here.<sup>248</sup>

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<sup>248</sup> <https://www.telegram.com/news/20170927/proposal-expands-right-to-repair-movement-to-electronics-in-mass> (quoting Gay Gordon Byrne, executive director of

### *A. Quality of Repair*

As part of their objection to the proposed legislation, original manufacturers expressed concern that quality of repairs would be compromised if done by consumers and through independent repair shops. Hence, a potential criticism of this Article's thesis could be that strengthening the right to repair in the manners recommended herein would ultimately decrease the quality of repairs.

We are not sure that this concern is a valid one, considering that repairs under the proposed legislation would be made in a competitive market. If repair by certain types of businesses would not meet sufficiently high standards, it is likely that consumers would switch to alternative repair services, including repair services offered by the original manufacturer or its authorized agents.<sup>249</sup> Absent any concrete market failures, the invisible hand of the market can presumably be trusted in this context. In fact, opening repair markets for competition could result in the development of new repair tools and methods as well as in better diffusion of repair innovation, which could very well increase quality of independent repairs.<sup>250</sup> Generally speaking, it is likely that the more the original manufacturers will support repair businesses, rather than fighting them—for example, by offering replacement parts and repair manuals under fair and reasonable terms—the better the quality of repairs would be.

In any event, even to the extent the concern regarding the quality of repairs is valid, this does not mean that the right to repair should be curtailed. To a large extent, the manufacturers' argument in this context is paternalistic, and consumers should be allowed to choose "bad repairs" for lower prices over "good repairs" for higher prices. Needless to say, original manufacturers can decrease the cost of their repair services to make them more attractive to consumers, or make authorized repair services more available. As far as the interests of original manufacturers to maintain their reputation is concerned, this could possibly be addressed through the law dealing with warranties. Finally, inasmuch as repair of certain products entail safety concerns, this is a matter for tort law and/or regulation and not for intellectual property law.

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the Repair Organization, who said manufacturers have a financial interest in keeping all repair business for themselves. "They have a very strong economic interest in monopolizing repair," Byrne told the committee.)

<sup>249</sup> There are a number of resources consumers have to ensure that they are using reputable, quality repair shops, including the Better Business Bureau ratings and other consumer reviews.

<sup>250</sup> For example, more organizations like iFixit.

### *B. Economic Loss for Manufacturers*

Another criticism of the legislation and this Article's proposals could be that adopting them would result in an economic loss for the original equipment manufacturers, which would ultimately have a negative impact on their incentives to innovate and create new products for the benefit of society.

We do not argue against the proposition that maintaining competition in the markets for repair services and replacement parts does not necessarily align with the economic interests of original manufacturers, at least not with respect to short-term interests. As we mentioned in the Introduction, the repair business accounts for 3% of the U.S. economy.<sup>251</sup> Yet, this itself is not a reason to deviate from fair competition, and grant manufacturers exclusive control over such markets. There is simply no special justification to deviate from our default societal norm (competition) in case of the repair and replacement parts markets. After all, it is not that absent control of these secondary markets, manufacturers could not have profits at a level that would provide an incentive to invent and create new products. As to particular cases where the costs of research and development exceed the profits in the primary market for the ensuing product, perhaps the development of such a product should not be incentivized at all through the promise of rent seeking through exclusive control over the repair market.<sup>252</sup> In any event, the costs of development should be reflected in the pricing of the product rather than be recouped in other markets. Manufacturers should not be allowed to predatorily price their products low and their repair services and replacement parts—higher, to recoup on the unnaturally low product price.<sup>253</sup>

Notably, a business that makes efforts to facilitate repairs by its customers, may actually experience a growth in business in the long run, inasmuch as the ability to repair a product is an important factor in consumers' market choices. As a side note, any decline in profits as a result of maintaining competition in the markets for repair services and replacement parts may push manufacturers to find other creative ways, which are simultaneously

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<sup>251</sup> See *supra* note 5 and accompanying text.

<sup>252</sup> And in general, no manufacturer should be allowed to "own" their markets solely. See generally Mark A. Lemley & Mark P. McKenna, *Owning Mark(et)s*, 109 MICH. L. REV. 137 (2010).

<sup>253</sup> "Consumers are harmed only if below-cost pricing allows a dominant competitor to knock its rivals out of the market and then raise prices to above-market levels for a substantial time." <https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/single-firm-conduct/predatory-or-below-cost>.

beneficial to society, to boost their profits. Finally, it is important to remember that the connection between the scope of intellectual property protection and the level of incentives provided by the system, is not necessarily linear.<sup>254</sup> Thus, even though some of the proposals we have made may narrow the scope of certain intellectual property rights in limited contexts, this would not necessarily result in a corresponding decrease in incentives to innovate.

### *C. Increase in Counterfeiting or Theft of Intellectual Property*

Yet another criticism of the repair legislation has been that this will enable an increase in counterfeiting or the theft of intellectual property. For example, in its letter to Illinois legislators, Wahl Clipper Corporation stated,

Our manufacturing location helps us protect our confidential information and provides a competitive advantage. If our competitors, who mainly make their clippers in Asia, obtained this confidential information because of [the proposed repair law], it would impact our ability to compete on a global scale and diminish an advantage of manufacturing in Illinois. As you can see, [intellectual property] is a very critical issue for us.<sup>255</sup>

With respect to Wahl's specific assertion of the increased ability to steal their intellectual property, it is clear that Wahl is referring to their trade secrets in how they manufacture their clippers. As a point of fact, this type of trade secret is not contemplated as being within the ambit of the repair legislation as it is not related to repairing clippers. As a general matter, the idea that information relating to repair, along with parts and tools, would increase intellectual property theft is simply a scare tactic and part of rhetoric that does not seem to have basis in reality. While counterfeiting of all types of products is a reality, the repair information will not increase what is already happening.

Where repair information could likely assist counterfeiters is in making their counterfeits better quality, as they will have access to a better understanding of how the products work. However, this, too, is highly unlikely to happen.

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<sup>254</sup> See Michal Shur-Ofry, *IP and the Lens of Complexity*, 54 IDEA 55, 96 (2013) ("The expectations that each increase in the scope of IP will lead to a proportionate increase in the level of innovation; that each limitation of that scope will result in a corresponding decrease in innovation; or that we can promote external socially desired values simply by limiting or calibrating the scope of intellectual property protection—are unrealistic.").

<sup>255</sup> Letter from Wahl, *supra* note 39.

Counterfeiters are not interested in making high quality products.<sup>256</sup> The business model of counterfeiting is premised on making products that are as minimally effective so as to deceive consumers.<sup>257</sup> More investment is put into making sure the product mimics the look of the real thing, not in making sure it functions like the real thing.<sup>258</sup> This way, counterfeiters can maximize their return more effectively. In addition, counterfeiters decide on which products to counterfeit based on the demand for such products by consumers. In Wahl's case, they claim to own 60% of the market share for clippers. If Wahl experiences any increase in counterfeiting of their clippers, it is not due to releasing repair information, but more due to their apparent clipper popularity.

There is a purpose behind this rhetoric, aside from scare tactics. If manufacturers, like Wahl, claim that there will be an increase in counterfeiting, this assists in their conversations with CBP. Each year, CBP meets with manufacturers in various industries to discuss strategy and data regarding counterfeits from the specific industries. This type of narrative regarding a correlation between increased repair information and an increase in counterfeits would give manufacturers an additional tool with which to strengthen the basis on which CBP already aggressively detains and seizes replacement parts and other shipments.

## CONCLUSION

The repair movement has been steadily gaining ground over the last few years and it is our hope that the momentum can continue. In this Article, we focus on the interface between the right to repair, advocated by this movement, and intellectual property rights. Our general thesis is that intellectual property law should not inhibit the right to repair from being fully implemented in the U.S. Indeed, the theoretical model developed in our Article supports the right to repair and leads to the conclusion that the implementation of such a right is fully consistent with intellectual property

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<sup>256</sup> See Shane Hickey, *Whether You're Unaware or Don't care, Counterfeit Goods Pose a Serious Threat*, THE GUARDIAN (Dec. 2, 2018), <https://www.theguardian.com/technology/2018/dec/02/whether-youre-unaware-or-dont-care-counterfeit-goods-pose-a-serious-threat> (describing counterfeit children toys that contained high levels of toxic chemicals).

<sup>257</sup> See Thorsten Staake, Frederic Thiesse & Elgar Fleisch, *Business Strategies in the Counterfeit Market*, 65 J. BUS. RESEARCH 658, 661-62 (2012) (describing five groups of counterfeiters based on the types of counterfeit goods produced; four out of the five groups all created high visual quality (meaning they looked like the original product) but varying degrees of functional quality).

<sup>258</sup> See *id.* at 663-64 (discussing the business strategies of each group of counterfeiter). See also Hickey, *supra* note 256 (relating anecdotes regarding substandard functioning counterfeit products).

protection, and in fact—can be justified by the very same policy considerations that are often used to justify intellectual property rights. However, from a doctrinal point of view—our analysis points out that the concept of a right to repair and the proposed state legislation that seeks to secure it are not really accommodated by our far-reaching intellectual property regime. Our framing of the right to repair in four concentric circles illuminates the specific areas where intellectual property law may be implicated to either preempt state-based repair laws or impede their implementation. We have attempted to design practical solutions to these areas, such as repair-friendly interpretations of patent and trademark law doctrines, defaulting in favor of repair in close cases of repair versus reconstruction, or disallowing intellectual property owners to assert patents or trademarks against those who are using them for repair purposes. We also join in the repair movement’s push to “fix the DMCA” by removing the provisions around circumventing digital locks (and in particular, the provisions that make transmission of relevant information illegal). In addition, to supplement such reforms, we recommend certain finetuning of the proposed state legislation. It is our hope that all of this will assist in eliminating intellectual property law as a barrier to implementing a nationwide right to repair.