

The Right to Repair and the Corporate Stranglehold over the Consumer: Profits over People

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I.	INTRODUCTION	165
A.	<i>John Deere’s War on Sustainable Farming</i>	169
B.	<i>Apple Inc., v. Henrik Huseby</i>	172
II.	OPONENTS REASONING AGAINST RIGHT TO REPAIR.....	174
III.	PROONENTS REASONING FOR RIGHT TO REPAIR	177
IV.	THE FUTURE OF RIGHT TO REPAIR.....	183

I. INTRODUCTION

Today, just about everything you own has a computer chip in it.¹ Cars, televisions, coffee makers, refrigerators, and printer ink cartridges are all embedded with computers and software.² Without that software, these products would not function.³ With the addition of these embedded computers and software, it is now more difficult for individuals to repair their products.⁴ However, this difficulty does not arise from any inherent complexities within the product itself, but rather because the manufacturers of these products do not want you tinkering with “their”

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1. Kyle Wiens, *You Bought That Gadget, and Dammit, You Should Be Able to Fix It*, WIRED (Mar. 22, 2017, 6:30 AM), <http://www.wired.com/2017/03/right-to-repair-laws/>.

2. *Id.*; Jason Koebler, *Appliance Companies are Lobbying to Protect Their DRM-Fueled Repair Monopolies*, MOTHERBOARD (Apr. 25, 2018, 8:00 AM), http://motherboard.vice.com/en_us/article/vbvk3b/appliance-companies-are-lobbying-against-right-to-repair; Corynne McSherry, *Want More Competition in Tech? Get Rid of Outdated Computer, Copyright, and Contract Rules*, ELECTRONIC FRONTIER FOUND. (Dec. 20, 2018), <http://www.eff.org/deeplinks/2018/12/want-more-competition-tech-get-rid-outdated-computer-copyright-and-contract-rules>.

3. Kyle Wiens & Gay Gordon-Byrne, *Why We Must Fight for the Right to Repair Our Electronics*, IEEE SPECTRUM (Oct. 24, 2017, 3:00 PM), <http://spectrum.ieee.org/green-tech/conservation/why-we-must-fight-for-the-right-to-repair-our-electronics>.

4. *Id.*

products.⁵ Manufacturers implement digital rights management (DRM) software to artificially “lock out” consumers from performing basic repairs.⁶ Manufacturers maintain that consumers own the hardware, but the manufacturers really own the software.⁷ Since consumers are only licensed to use the software, this creates an additional roadblock in any attempts to repair defective products.⁸ Manufacturers also allege that repair is too dangerous for consumers.⁹ Thus, Apple and other manufacturers require consumers to utilize networks of in-house and authorized repair facilities.¹⁰

Consumers once had the expectation of repair rights.¹¹ When the Apple II computer was released in 1977, it came with a free manual with schematics to assist with repairs.¹² This is no longer the current standard.

The main opponents of right to repair are manufacturers—manufacturers do not want you to repair your products; they want you to buy new ones.¹³ If you must repair your device, manufacturers want consumers to use their repair networks where they maintain a monopoly on repair.¹⁴ SquareTrades estimated that Americans spent \$3.4 billion on smartphone repairs in 2018.¹⁵ Manufacturers want to control the repair networks; however, they do not want you to repair your device, they want you to upgrade.¹⁶

5. Valerie Vande Panne, *Fight for Your Right . . . to Repair*, SALON (Feb. 27, 2019, 9:00 AM), http://www.salon.com/2019/02/27/fight-for-your-right-to-repair_partner/; see Wiens, *supra* note 1.

6. Koebler, *supra* note 2.

7. Wiens & Gordon-Byrne, *supra* note 3.

8. *Id.*

9. See Wiens, *supra* note 1.

10. See, e.g., Jason Koebler, *Do You Know Anything About Apple's 'Authorized Service Provider's Program?'*, MOTHERBOARD (Mar. 16, 2017, 11:21 AM), http://motherboard.vice.com/en_us/article/ypkqxw/do-you-know-anything-about-apples-authorized-service-provider-program.

11. Wiens & Gordon-Byrne, *supra* note 3.

12. *Id.*

13. Wiens, *supra* note 1. In general, several studies have shown the lifespan of consumer electronics has become shorter and the “percentage of products sold to replace defective ones has increased remarkably.” Susanna Ala-Kurikka, *Lifespan of Consumer Electronics Is Getting Shorter, Study Finds*, GUARDIAN (Mar. 3, 2015, 7:32 AM), <http://www.theguardian.com/environment/2015/mar/03/lifespan-of-consumer-electronics-is-getting-shorter-study-finds>.

14. Panne, *supra* note 5; Nathan Proctor, *Corporations Are Co-Opting Right-to-Repair*, WIRED (Mar. 16, 2019, 8:00 AM), <http://www.wired.com/story/right-to-repair-co-opt/>; Wiens & Gordon-Byrne, *supra* note 3.

15. Jacob Passy, *Americans Spent Over \$3 Billion Last Year Fixing Their Smartphone Screens*, MARKETWATCH (Nov. 25, 2018, 3:30 PM), <http://www.marketwatch.com/story/americans-spent-over-3-billion-last-year-fixing-their-smartphone-screens-2018-11-20>.

16. Wiens & Gordon-Byrne, *supra* note 3.

The idea behind the right to repair is simple. You bought the device, you own it, and you should have the right to repair it.¹⁷ The right to repair movement attempts to accomplish this via legislation that enables consumers and third-party repairers to have the right to repair products.¹⁸ Manufacturers who oppose the right to repair claim they are promoting consumer safety, reducing cybersecurity risks, and protecting their intellectual property portfolio.¹⁹ Conversely, proponents of the right to repair argue that manufacturers' practices are anti-competitive, inefficient, contribute to an increasing amount of e-waste, and infringe on consumer property rights.²⁰

In 2012, Massachusetts passed the first automotive right to repair legislation in the United States.²¹ The bill requires car manufacturers to provide manuals and replacement parts to the public for the purpose of repair.²² Eighty-six percent of voters voted in favor of the bill.²³ Shortly after the proposal passed, carmakers entered into a national memorandum of understanding and voluntarily extended the terms of the Massachusetts law nationwide.²⁴ Soon after, “[t]he commercial vehicle industry followed suit in October 2015.”²⁵ However, the bill is limited to cars and remains the only right to repair bill in any state.²⁶ The idea here is, however, the same: consumers should have access to parts and manuals to help them access embedded software and equipment in all products that they purchase.²⁷ In 2018, Congress took the first steps towards facilitating the

17. *Id.*

18. See *The Repair Association*, REPAIR ORG., <http://repair.org> (last visited Apr. 1, 2019).

19. See Wiens, *supra* note 1.

20. See *id.*

21. Kyle Wiens, *You Gotta Fight for Your Right to Repair Your Car*, ATLANTIC (Feb. 13, 2014), <http://www.theatlantic.com/technology/archive/2014/02/you-gotta-fight-for-your-right-to-repair-your-car/283791/>.

22. The initiative required “motor vehicle manufacturers to allow vehicle owners and independent repair facilities in Massachusetts to have access to the same vehicle diagnostic and repair information made available to the manufacturers’ Massachusetts dealers and authorized repair facilities.” Wiens & Gordon-Byrne, *supra* note 3.

23. *Id.*

24. *Id.*

25. *Id.*

26. See Eric Hamilton, *Massachusetts Is About to Fight a Very Important Right-to-Repair Battle*, TECHSPOT (Oct. 21, 2019, 6:58 AM), <http://www.techspot.com/news/82418-massachusetts-about-fight-important-right-repair-battle.html>; *Massachusetts*, REPAIR ORG., <http://massachusetts.repair.org> (last visited Apr. 1, 2019).

27. See *Working Together to Make Repair-Friendly Public Policy*, REPAIR ORG., <http://repair.org/legislation> (last visited Apr. 1, 2019).

right to repair nationwide with the passage of the Digital Millennium Copyright Act (DMCA).²⁸

The DMCA makes it illegal to circumvent a technological measure (e.g., DRM) that effectively controls access to copyrighted works.²⁹ The DMCA also bans the manufacture of tools to circumvent these locks.³⁰ Enacted in 1998, the DMCA was implemented to prevent people from pirating CDs and DVDs.³¹ The DMCA, along with DRM, has made its way from music and movies to smartphones, tractors, home appliances, and medical equipment.³² Every three years, Congress exempts classes of work that “are, or are likely to be in the succeeding 3-year period, adversely affected by the prohibition . . . in their ability to make noninfringing uses.”³³

In 2018, Congress passed exemptions to the DMCA that allow consumers the ability to repair certain software-embedded devices without committing copyright infringement.³⁴ Sadly, these exemptions are extremely narrow and only apply to specific categories including smartphones, home appliances, Internet of Things gadgets, and motorized land vehicles.³⁵ Further, they do not provide repairers access to manuals, parts, or software tools to circumvent these restrictions for the purpose of repair.³⁶ The exemptions do, however, provide rights for third-party repair.³⁷ These exemptions represent the first steps in a long road in the fight for the right to repair.

In addition to the DMCA, corporations rely on Terms of Service (TOS) agreements and End User License Agreements (EULAs) to further restrict consumers’ ability to repair and resell their own products.³⁸ In

28. See Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 83 Fed. Reg. 54,010 (Oct. 26, 2018) (codified at 37 C.F.R. § 201.40).

29. 17 U.S.C. § 1201 (2012).

30. *Id.*

31. Kyle Wiens, *Smarter Copyright Laws Could Stop the Next VW Scandal*, WIRED (Oct. 27, 2015, 7:00 AM), <http://www.wired.com/2015/10/smarter-copyright-laws-could-stop-the-next-vw-scandal/>.

32. Koebler, *supra* note 2.

33. 17 U.S.C. § 1201(a)(1)(c).

34. U.S. COPYRIGHT OFFICE, SECTION 1201 RULEMAKING: SEVENTH TRIENNIAL PROCEEDING TO DETERMINE EXEMPTIONS TO THE PROHIBITION ON CIRCUMVENTION, RECOMMENDATION OF THE ACTING REGISTER OF COPYRIGHTS (Oct. 2018), http://cdn.loc.gov/copyright/1201/2018/2018_Section_1201_Introduction_and_Recommended_Regulatory_Language.pdf.

35. See Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 83 Fed. Reg. 54,010 (Oct. 26, 2018) (codified at 37 C.F.R. § 201.40).

36. *Id.*

37. *Id.*

38. McSherry, *supra* note 2.

effect, these contracts suggest that the users are given a license to use these products rather than any actual ownership.³⁹

Intellectual property laws were created to protect creativity and promote innovation, not to stifle economic development.⁴⁰ In this Comment, I will discuss why the right to repair is not only viable within intellectual property law but substantially beneficial for consumers and the economy. Additionally, I will look at examples of predatory actions taken by two prominent corporations to maintain their monopoly on repair. Further, I will discuss counterarguments from proponents of right to repair, and why the main internal motivation for opposition is economical.

A. *John Deere's War on Sustainable Farming*

For farmers, time constraints are critical.⁴¹ The difference between a repair that takes a few hours and one that takes a few days can be vital to crop production.⁴² In recent years, farming equipment has become increasingly reliant on embedded computers and software to operate.⁴³ For example, John Deere tractors rely on eight different software and hardware components to function.⁴⁴ One malfunctioning sensor can render a machine completely inoperable.⁴⁵ Before the implementation of computers and software, tractors were easier to repair.⁴⁶ If a part broke, farmers were able to obtain a replacement and fix it themselves or find a third-party repair shop to complete the repair.⁴⁷ Now, the computer systems embedded in the equipment utilize DRM and Technological Protection Measures (TPM) to reject non-proprietary parts.⁴⁸ Further, repairers need access to John Deere's diagnostics software to repair the equipment.⁴⁹ By adding these hurdles to repair, John Deere maintains an

39. *Id.*

40. *Protecting Creativity—Copyright and Wrong*, *ECONOMIST* (Apr. 8, 2010), <http://www.economist.com/leaders/2010/04/08/copyright-and-wrong>.

41. Jason Koebler, *Why American Farmers Are Hacking Their Tractors with Ukrainian Firmware*, *MOTHERBOARD* (Mar. 21, 2017, 3:17 PM), http://motherboard.vice.com/en_us/article/xykkkd/why-american-farmers-are-hacking-their-tractors-with-ukrainian-firmware.

42. See Kyle Wiens & Elizabeth Chamberlain, *John Deere Just Swindled Farmers Out of Their Right to Repair*, *WIRED* (Sept. 19, 2018, 1:12 PM), <http://www.wired.com/story/john-deere-farmers-right-to-repair/>.

43. See Koebler, *supra* note 41.

44. See AARON PERZANOWSKI & JASON SCHULTZ, *THE END OF OWNERSHIP: PERSONAL PROPERTY IN THE DIGITAL ECONOMY* 144 (2016).

45. Wiens, *supra* note 1; Wiens & Chamberlain, *supra* note 42.

46. Wiens, *supra* note 1.

47. *Id.*

48. *Id.*

49. See Koebler, *supra* note 41.

additional revenue stream because they force farmers to utilize their authorized repair network to repair equipment.⁵⁰

John Deere has a monopoly on the repair market of their equipment.⁵¹ Many rural farmers do not have localized access to authorized John Deere repair facilities.⁵² Often, the closest John Deere repair facility is dozens of miles away.⁵³ Jeff Ludeke was a former employee at a John Deere dealership who now owns and operates an independent tractor repair shop.⁵⁴ Ludeke could perform significantly more repairs if he had access to John Deere's proprietary software.⁵⁵ However, John Deere refuses to give farmers access to these tools and only allows licensed repair shops to perform repairs.⁵⁶ Farmers have reported failed parts to John Deere, only for the company to turn around and refuse to repair or replace the part, forcing the farmers to upgrade to the new model.⁵⁷

To circumvent this monopoly, farmers access hacked software from Ukraine that allows them to bypass the DRM.⁵⁸ John Deere maintains that it has no issue with its customers accessing these cracked software tools; however, any attempts to purchase the diagnostics software directly from John Deere have been denied.⁵⁹ For example, John Deere's EULAs explicitly deny access to such software.⁶⁰ Moreover, by signing these EULAs, the farmers give up all control over the electronics within the machine—including sensors, actuators, computing units, as well as data

50. PERZANOWSKI & SCHULTZ, *supra* note 44.

51. Koebler, *supra* note 41.

52. *See id.*

53. Laura Sydell, *DIY Tractor Repair Runs Afoul of Copyright Law*, NPR (Aug. 17, 2015, 4:20 PM), http://www.npr.org/sections/alltechconsidered/2015/08/17/432601480/diy-tractor-repair-runs-afoul-of-copyright-law?mod=article_inline?mod=article_inline.

54. Motherboard, *Tractor Hacking: The Farmers Breaking Big Tech's Repair Monopoly*, YOUTUBE (Feb. 1, 2018), <http://www.youtube.com/watch?v=F8JCh0owT4w>.

55. *Id.*

56. Koebler, *supra* note 41.

57. Motherboard, *supra* note 54.

58. *See* Koebler, *supra* note 41.

59. *Id.*; *Software Cracking*, WIKIPEDIA, http://en.wikipedia.org/wiki/Software_cracking (last visited Dec. 2, 2019) (“Software cracking is the modification of software to remove or disable features which are considered undesirable by the person cracking the software, especially copy protection features or software annoyances like nag screens and adware.”).

60. LICENSE AGREEMENT FOR JOHN DEERE EMBEDDED SOFTWARE (Oct. 2016), http://www.deere.com/privacy_and_data/docs/agreement_pdfs/english/2016-10-28-Embedded-Software-EULA.pdf.

documentation and diagnostics.⁶¹ According to the EULA, the farmers agree to these terms when they simply switch on the machine.⁶²

In 2015, Congress enacted exemptions to the DMCA to provide farmers the right to access and to modify software to repair their equipment.⁶³ In opposition, John Deere argued that farmers did not own their vehicle but merely had “an implied license for the life of the vehicle to operate the vehicle.”⁶⁴ Additionally, John Deere suggested farmers might hack their equipment to dodge emission requirements if they could modify software.⁶⁵ Furthermore, John Deere argued that circumvention of its software would allow owners to use its equipment to access protected expressive content, such as copyrighted music or movies.⁶⁶ Despite John Deere’s protestations, Congress renewed the exemptions in 2018.⁶⁷ However, it is still against John Deere’s EULA to modify the software of their equipment, and farmers still have no way to legally access this software.⁶⁸ As a result, farmers are lobbying for access to diagnostic software that enables them to repair their tractors themselves.⁶⁹ In 2017, Nebraska legislators attempted to pass the Fair Repair Act (the bill) that provides such access.⁷⁰ However, the bill died before a public hearing was held, largely due to the power of anti-repair corporations.⁷¹ Companies like Microsoft, Apple, and AT&T sent representatives to the bill hearings to oppose the bill.⁷² AT&T even threatened to stop selling products in the state if the bill was passed.⁷³

61. *Id.*; Wiens & Gordon-Byrne, *supra* note 3.

62. LICENSE AGREEMENT FOR JOHN DEERE EMBEDDED SOFTWARE, *supra* note 60; Wiens & Gordon-Byrne, *supra* note 3.

63. U.S. COPYRIGHT OFFICE, SECTION 1201 RULEMAKING: SIXTH TRIENNIAL PROCEEDING TO DETERMINE EXEMPTIONS TO THE PROHIBITION ON CIRCUMVENTION, RECOMMENDATION OF THE REGISTER OF COPYRIGHTS 246 (Oct. 2015), <http://cdn.loc.gov/copyright/1201/2015/registers-recommendation.pdf>.

64. Darin Bartholomew, Long Comment Regarding a Proposed Exemption Under 17 U.S.C. 1201 (2014), http://www.copyright.gov/1201/2015/comments-032715/class%2022/John_Deere_Class22_1201_2014.pdf.

65. Wiens, *supra* note 1.

66. Bartholomew, *supra* note 64.

67. Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 83 Fed. Reg. 54,010 (Oct. 26, 2018) (codified at 37 C.F.R. § 201.40).

68. LICENSE AGREEMENT FOR JOHN DEERE EMBEDDED SOFTWARE, *supra* note 60.

69. Motherboard, *supra* note 54.

70. Olivia Solon, *Under Pressure from Tech Companies, ‘Fair Repair’ Bill Stalls in Nebraska*, GUARDIAN (Mar. 11, 2017, 12:33 PM), <http://www.theguardian.com/us-news/2017/mar/11/nebraska-farmers-right-to-repair-bill-stalls-apple>.

71. *See id.*

72. Motherboard, *supra* note 54.

73. *Id.*

In September 2018, the California Farm Bureau, an organization representing 2.5 million agricultural workers, reached an agreement with the Equipment Dealers Association, an association that represents John Deere and other manufacturers who restrict farmers from accessing or modifying software on their farm equipment.⁷⁴ The agreement states that farmers can no longer reset immobilizer systems, they cannot reprogram electronic control units or engine control modules, they cannot change equipment or engine settings that might negatively affect emissions or safety, and they cannot download or access the source code of any proprietary embedded software.⁷⁵ California is the largest producer of food in the United States.⁷⁶ This agreement will have significant ramifications for the entire farming industry and consumers at large because it will cost farmers additional time and money to oblige by the agreement's restrictive terms. The agreement sets a bad precedent, not only for the farming industry, but for any industry that uses products with computers and software.

B. Apple Inc., v. Henrik Huseby

Henrik Huseby is the owner-operator of a third-party phone repair shop in Norway that has no affiliation with Apple.⁷⁷ In 2017, Huseby attempted to acquire sixty-three refurbished Apple iPhone 6 and 6s glass screens from China in order to service phones for his customers.⁷⁸ Apple claimed the screens were counterfeits.⁷⁹ At Apple's request, Norwegian customs agents detained the phone screens.⁸⁰ Huseby maintains that the screens were not counterfeits but rather refurbished parts that he accessed legally.⁸¹ Apple demanded that the screens be destroyed and that Huseby

74. Jason Koebler, *Farmer Lobbying Group Sells Out Farmers, Helps Enshrine John Deere's Tractor Repair Monopoly*, MOTHERBOARD (Sept. 11, 2018, 8:47 AM), http://motherboard.vice.com/en_us/article/kz5qgw/california-farm-bureau-john-deere-tractor-hacking-right-to-repair; Wiens & Chamberlain, *supra* note 42.

75. Wiens & Chamberlain, *supra* note 42.

76. See Kurt Snibbe, *California Farms Produce a lot of Food—but What and How Much Might Surprise You*, ORANGE COUNTY REG. (July 27, 2017, 12:13 PM), <http://www.ocregister.com/2017/07/27/california-farms-produce-a-lot-of-food-but-what-and-how-much-might-surprise-you/>.

77. Jason Koebler, *Apple Sued an Independent iPhone Repair Shop Owner and Lost*, MOTHERBOARD (Apr. 13, 2018, 11:03 AM), http://motherboard.vice.com/en_us/article/a3yadk/apple-sued-an-independent-iphone-repair-shop-owner-and-lost.

78. *Id.*

79. *Id.*

80. *Id.*

81. *Id.*

pay Apple a \$3566 fine.⁸² Apple also demanded that Huseby admit wrongdoing to avoid a lawsuit, but Huseby refused.⁸³

Apple filed suit against Huseby in Norway for trademark violations.⁸⁴ The court ruled in favor of Huseby.⁸⁵ The court reasoned there was not a valid trademark claim because Apple's logo was an internal mark and not visible through normal use.⁸⁶ Additionally, the court stated that Apple does not make these parts accessible to repair shops like Huseby's.⁸⁷ Huseby's business is reliant on accessing these refurbished parts that are entirely compatible and completely identical to Apple's original equipment manufacturer (OEM) iPhone screens.⁸⁸ Apple never made the argument that the parts were low-quality because they were aware the screens were OEM parts.⁸⁹ Additionally, the court reasoned that because Huseby had no intention to remove the cover-up of the Apple logo on the screens, he did not intend to deceive his customers into thinking it was an OEM part.⁹⁰ The court then questioned Apple's use of internal logos for the purpose of a trademark claim.⁹¹ The court ruled that Apple needed to compensate Huseby for his legal fees and for any losses sustained because of the detention of his iPhone screens.⁹² The case was appealed by Apple and was heard in the Norwegian Court of Appeals.⁹³

The Court of Appeals reversed, holding that Huseby violated Apple's trademark.⁹⁴ The court reasoned that because the glass screens had the Apple logo, consumers would likely be misled and believe that the screens

82. *Id.*

83. *Id.*

84. *Id.*

85. *Id.*

86. Jason Koebler, *Apple Is Still Trying to Sue the Owner of an Independent iPhone Repair Shop*, MOTHERBOARD (June 6, 2019, 3:14 PM), http://www.vice.com/en_us/article/9kxzpy/apple-is-still-trying-to-sue-the-owner-of-an-independent-iphone-repair-shop-louis-rossmann-henrik-huseby ("Apple logos on the screen were painted over, and wouldn't be visible anyway to anyone who used a repaired iPhone (the logos would face the inside of the phone.)").

87. *Id.*

88. *Id.*

89. Louis Rossmann, *Apple's War on Refurbishing*, YOUTUBE (Oct. 7, 2018), http://www.youtube.com/watch?v=vA_em-0VYWY&t=.

90. Koebler, *supra* note 77.

91. *Id.*

92. Tingsrätt [TR] [District Court] 2018-02-02 17-151334TV1-OTIR/04 RG (Swed.), http://archive.org/details/Apple_Inc_vs_Henrik_Huseby_17-151334TV1-OTIR_04_verdict/mode/2up (translated using google translate).

93. Hovrätt [HovR] [Court of Appeal] 2019-06-21 LB-2018-62352 RG (Swed.), <http://lovdata.no/dokument/LBSIV/avgjorelse/lb-2018-62352> (translated using google translate).

94. *Id.*

were in fact OEM.⁹⁵ Again, Huseby argued that he never purported the screens to be OEM and therefore never intended to deceive his customers.⁹⁶ Huseby is considering whether to appeal to the Supreme Court of Norway.⁹⁷

II. OPPONENTS REASONING AGAINST RIGHT TO REPAIR

Opponents of right to repair maintain that repairs made outside of manufacturers' authorized repair networks will lead to complications.⁹⁸ These include cybersecurity risks, corporate liability and consumer safety concerns, and warranty issues.⁹⁹ Moreover, there are intellectual property and economic concerns associated with right to repair.

Opponents maintain that right to repair legislation will infringe on manufacturers' intellectual property rights including copyright, trademark, and trade secrets.¹⁰⁰ They argue that granting repairers the ability to bypass software restrictions on consumer products leaves those products susceptible to infringing uses.¹⁰¹ Opponents reason that allowing consumers to bypass these restrictions will facilitate piracy by giving individuals access to highly expressive works that are not otherwise accessible.¹⁰² Manufacturers argue that accessing their parts in the "grey market" is a violation of their trademark and further claim that these products are counterfeits.¹⁰³ Manufacturers also argue that providing

95. *Id.*

96. *Id.*

97. Ingrid Ekeberg et al., *Apple Wins Over Small iPhone Repairman:—There Is a Reason Why the World's Largest Company Sues a Poor Man on Ski*, DAGENS NÆRINGSLIV (June 7, 2019, 1:15 PM), <http://www.dn.no/teknologi/apple/henrik-huseby/iphone/apple-vant-over-liten-iphone-reparator-det-er-en-grunn-til-at-verdens-storste-selskap-saksoker-en-stakkar-pa-ski/2-1-634167> (translated using google translate).

98. Letter from John I. Taylor, Senior Vice President, Gov't Relations, LG Elecs. USA, to the Honorable David Harris, Ill. Gen. Assembly (Apr. 18, 2018), <http://www.documentcloud.org/documents/4446375-LG-LETTER-HB-4747-2.html>.

99. *Id.*

100. See U.S. COPYRIGHT OFFICE, SECTION 1201 RULEMAKING: SEVENTH TRIENNIAL PROCEEDING TO DETERMINE EXEMPTIONS TO THE PROHIBITION ON CIRCUMVENTION 214 (Oct. 2018), http://cdn.loc.gov/copyright/1201/2018/2018_Section_1201_Acting_Registers_Recommendation.pdf.

101. *Id.*

102. *See id.*

103. TR 2018-02-02 17-151334TV1-OTIR/04 RG (Swed.), http://archive.org/details/Apple_Inc_vs_Henrik_Huseby_17-151334TV1-OTIR_04_verdict/mode/2up (translated using google translate). Grey market goods are branded goods that are sold into a market without the brand owner's consent. They are not counterfeit goods, as they bear authentic trademarks, or copyrights, or both. See Matthew Fornaro, *A Parallel Problem: Grey Market Goods and the Internet*, 8. J. TECH. L. & POL'Y 69 (2003).

information to facilitate repair would require them to divulge trade secrets.¹⁰⁴

Moreover, opponents assert that right to repair legislation could lead to concerns about corporate liability.¹⁰⁵ Opponents maintain that their current repair networks provide safe quality products and services.¹⁰⁶ Opponents suggest that third-party repairs create potential safety hazards for the consumer for which the company could potentially be held liable.¹⁰⁷ Opponents maintain that the complexity of repair requires that authorized repairers do servicing.¹⁰⁸ Lobbyists against right to repair have suggested that consumers who attempt to repair their phone screens could cut their fingers on broken glass.¹⁰⁹ Opponents also cite potential safety issues if third-party servicers are allowed into people's homes.¹¹⁰ Opponents reason that manufacturers cannot vet technicians entering consumers' homes if technical information is made public knowledge.¹¹¹ In sum, manufacturers maintain that current service networks are sufficiently robust and there is not a need for additional repair networks.¹¹²

Opponents also suggest that right to repair legislation could lead to cybersecurity risks.¹¹³ For example, Apple cited consumer security concerns when it disabled iPhones with fingerprint scanners repaired by third-party servicers.¹¹⁴ Apple maintained that invalid components compromised the security of the device.¹¹⁵ However, Apple disabled iPhones repaired with OEM parts as well.¹¹⁶ Opponents have further suggested that repairing Wi-Fi enabled devices will leave home Wi-Fi networks susceptible to security breaches and expose personal data to hackers.¹¹⁷

104. See Wiens, *supra* note 1.

105. See, e.g., Letter from John I. Taylor, *supra* note 98.

106. *Id.*

107. *Id.*

108. *Id.*

109. Jason Koebler, *Source: Apple Will Fight 'Right to Repair' Legislation*, MOTHERBOARD (Feb. 14, 2017, 4:09 PM), http://motherboard.vice.com/en_us/article/mgxayp/source-apple-will-fight-right-to-repair-legislation.

110. Letter from John I. Taylor, *supra* note 98.

111. Letter from Jason L. Brown, Vice President Gen. Counsel & Sec'y, Dyson, Inc. to The Honorable David Harris, Ill. Gen. Assembly (Apr. 17, 2018), <http://perma.cc/6XWG-2MGY>.

112. Koebler, *supra* note 32.

113. Letter from John I. Taylor, *supra* note 98.

114. Kyle Wiens, *Apple Shouldn't Get to Brick Your iPhone Because You Fixed It Yourself*, WIRED (Feb. 18, 2016, 7:00 AM), <http://www.wired.com/2016/02/apple-shouldnt-get-to-brick-your-iphone-because-you-fixed-it-yourself/>.

115. *Id.*

116. *Id.*

117. Koebler, *supra* note 32.

In addition, manufacturers maintain that consumers don't actually own the product but are merely granted a license to use the product.¹¹⁸ Consumers must agree to EULAs that forbid the use of unauthorized hardware or software in conjunction with the device.¹¹⁹ These EULAs also forbid the second-hand sale of used devices.¹²⁰ Courts have held that these software license agreements are enforceable and the first sale doctrine is not a valid defense.¹²¹

Manufacturers also assert that manufacturer warranties prohibit them from supporting right to repair.¹²² In a letter to the Illinois General Assembly, LG purported that "it would be extremely difficult for manufacturers to honor product warranties in circumstances in which independent third-party servicers are granted full access to manufacturer's software, parts and products because they could damage a product with an improper part or repair."¹²³ However, according to the Magnuson-Moss Warranty Act, it is illegal for a manufacturer to condition warranty coverage on the use of their repair services and parts.¹²⁴ Yet, this practice is rampant. A recent study found that 90% of companies surveyed were in violation of the Act.¹²⁵ In 2018, the Federal Trade Commission (FTC) sent warning letters to Microsoft, Nintendo, and Sony, among others, that their practices were in violation of the Act.¹²⁶ The letter stated that failure to comply could result in law enforcement action.¹²⁷

The key driver for opponents of right to repair is, however, corporate profits. Unsurprisingly, opponents of right to repair do not mention this issue. Manufacturers want to monopolize repair services because monopolizing repair is extremely profitable.¹²⁸ "American smartphone

118. Bartholomew, *supra* note 64.

119. McSherry, *supra* note 2.

120. *Id.*

121. *See Vernor v. Autodesk, Inc.*, 621 F.3d 1102 (9th Cir. 2010).

122. Letter from John I. Taylor, *supra* note 98.

123. *Id.*

124. 15 U.S.C. §§ 2301-2312 (2015).

125. Matthew Gault, *45 Out of 50 Electronics Companies Illegally Void Warranties After Independent Repair, Sting Operation Finds*, MOTHERBOARD (Oct. 11, 2018, 1:27 PM), http://motherboard.vice.com/en_us/article/9k7mby/45-out-of-50-electronics-companies-illegally-void-warranties-after-independent-repair-sting-operation-finds.

126. Press Release, Fed. Trade Comm'n, *FTC Staff Warns Companies that It Is Illegal to Condition Warranty Coverage on the Use of Specified Parts or Services* (Apr. 10, 2018), <http://www.ftc.gov/news-events/press-releases/2018/04/ftc-staff-warns-companies-it-illegal-condition-warranty-coverage> ("Unless warrantors provide the parts of services for free or receive a waiver from the FTC, such statements generally are prohibited by the Magnuson-Moss Warranty Act.").

127. *Id.*

128. Kelsea Weber, *10 Reasons to Support Right to Repair*, iFIXIT (Oct. 2, 2018), <http://ifixit.org/blog/11590/10-reasons-to-support-right-to-repair/>.

owners broke more than 50 million screens last year—nearly two every second”¹²⁹ It is estimated that Apple generates between \$1-\$2 billion annually for product repairs.¹³⁰ However, device upgrades are even more profitable than repairs.¹³¹ In a letter to investors, Apple CEO Tim Cook discussed the negative effect device repairs had on Apple’s profits.¹³² He cited the increase of customers replacing iPhone batteries as a key factor to lower than expected revenues.¹³³ In 2018, the average age of an iPhone trade-in jumped to 2.83 years from 2.39 years in 2016.¹³⁴ This amounts to millions of dollars in lost revenue. It is no surprise that manufacturers want to maintain these repair revenue streams, but it is even better if they can make you upgrade and replace your devices.

III. PROPONENTS REASONING FOR RIGHT TO REPAIR

Proponents of right to repair legislation contend that the potential benefits of right to repair far outweigh the potential negatives. First, proponents advocate that current practices are anti-competitive and inefficient. Additionally, they assert that the current “throw-away” culture is unsustainable because it contributes to an ever-increasing amount of electronics waste (e-waste).¹³⁵ Finally, proponents maintain that the right to repair fits within the historical framework of intellectual property law.

Proponents of right to repair legislation posit that individuals have ownership and dominion over the products they lawfully acquired.¹³⁶ They maintain that the proliferation of software-enabled devices is challenging “long-established, fundamental rights and expectations of consumers” for those products.¹³⁷ Proponents also argue that right to repair is transformative and, therefore, a non-infringing fair use.¹³⁸ Fair use is a legal doctrine that promotes freedom of expression by permitting the

129. Passy, *supra* note 15.

130. Vianney Vaute, *Final Score 2018: What Went Right (and Wrong) in Fair Tech*, FORBES (Dec. 27, 2018, 7:37 AM), <http://www.forbes.com/sites/vianneyvaute/2018/12/27/final-score-2018-what-went-right-and-wrong-in-fair-tech/#12c44f00da51>.

131. *Id.*

132. Press Release, Apple, Letter from Tim Cook to Apple Investors (Jan. 2, 2019), <http://www.apple.com/newsroom/2019/01/letter-from-tim-cook-to-apple-investors/>.

133. *Id.*

134. Sarah Krouse, *Upgrade? No Thanks. Americans Are Sticking with Their Old Phones*, WALL ST. J. (Oct. 29, 2018, 9:00 AM), http://www.wsj.com/articles/upgrade-no-thanks-americans-are-sticking-with-their-old-phones-1540818000?mod=rss_Technology.

135. Kyle Wiens, *Unfixable Computers Are Leading Humanity Down a Perilous Path*, WIRED (June 22, 2012, 6:30 AM), <http://www.wired.com/2012/06/apples-unfixable-devices/>.

136. See U.S. COPYRIGHT OFFICE, *supra* note 100.

137. *Id.*

138. *Id.*

unlicensed use of copyright-protected works in certain circumstances.¹³⁹ To determine fair use, courts use a four-prong test: (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work.¹⁴⁰ Modifying device software in order to enable new uses is the essence of transformative under the fair use doctrine.¹⁴¹ Proponents insist that enabling interoperability and increasing the utility of hardware are fair uses.¹⁴²

Further, proponents maintain that right to repair promotes research to “understand the functional aspects of a copyrighted work.”¹⁴³ Moreover, they assert that repair supports the purpose of the embedded programs because a repairer’s intent is to enhance the intended use of the product.¹⁴⁴ In 2018, in its Seventh Triennial Section 1201 Proceeding, the Copyright Office agreed and held that bona fide repair and maintenance activities are generally non-infringing.¹⁴⁵

Proponents maintain that the purpose of firmware is primarily functional in nature.¹⁴⁶ They claim that software used to restrict device access “bears only a thin copyright interest that is overcome by the need to use that code for interoperability.”¹⁴⁷ Courts have found that this factor favors fair use where the relevant work is functional software.¹⁴⁸ Proponents maintain that the purpose of right to repair legislation is solely for diagnosis and repair, rather than for access to expressive works as opponents suggest.¹⁴⁹ Further, proponents assert that firmware has no independent commercial value, and it is unlikely to have a significant independent market that can be harmed.¹⁵⁰

139. *More Information on Fair Use*, U.S. COPYRIGHT OFF., <http://www.copyright.gov/fair-use/more-info.html> (last visited Dec. 2, 2019).

140. 17 U.S.C. § 107 (2018).

141. See U.S. COPYRIGHT OFFICE, *supra* note 100.

142. See *Sony Computer Ent., Inc. v. Connetix Corp.*, 203 F.3d 596 (9th Cir. 2000); *Sega Enter. Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1992).

143. See U.S. COPYRIGHT OFFICE, *supra* note 100.

144. *Id.*

145. *Id.*

146. In electronic systems and computing, firmware is a specific class of computer software that provides the low-level control for the device’s specific hardware. *Id.*

147. *Id.*

148. *Oracle Am. v. Google, Inc.*, 886 F.3d 1179, 1204-05 (Fed. Cir. 2018).

149. See U.S. COPYRIGHT OFFICE, *supra* note 100.

150. *Id.*

Opponents of right to repair also suggest that acquiring grey market goods with the intent to repair is a violation of their trademark.¹⁵¹ Under the Lanham Act, trademark owners are able to obtain seizure orders to prevent the distribution of counterfeit goods. However, companies are misusing these provisions to control the grey market.¹⁵² Trademark law was enacted with the intent to help consumers identify products, not to prevent their repair.¹⁵³ Louis Rossman owns and operates an electronics repair business.¹⁵⁴ Rossman attempted to access refurbished OEM parts, which are no longer available through Apple, from the grey market with the intent to repair his customers' products.¹⁵⁵ Apple worked with U.S. Customs and Border Protection to seize the parts.¹⁵⁶ Apple claimed that the parts were counterfeit, and because they bear the Apple logo, violated their trademark.¹⁵⁷

However, the first sale doctrine protects the ability of people to resell goods that bear trademark logos; even if the parts are refurbished or repaired because the trademark holder still received money from the first sale of the good.¹⁵⁸ Additionally, the Department of Justice's criminal resource manual states, "Congress did not intend the criminal provisions to apply to marks on so called 'parallel imports' or 'grey market' goods in which both the goods and the marks are genuine but which are sold outside of the trademark owner's authorized distribution channels."¹⁵⁹

Proponents of right to repair contend that current market conditions are inefficient and anti-competitive.¹⁶⁰ For example, it is ineffective to force consumers to utilize authorized repair networks.¹⁶¹ One industry expert suggested that it would take Apple over two and a half years to catch up on the backlog of necessary repairs in the United States alone.¹⁶²

151. Matthew Gault & Jason Koebler, *DHS Seized Aftermarket Apple Laptop Batteries from Independent Repair Expert Louis Rossman*, MOTHERBOARD (Oct 19, 2018, 1:25 PM), http://motherboard.vice.com/en_us/article/a3ppv/dhs-seized-aftermarket-apple-laptop-batteries-from-independent-repair-expert-louis-rossman.

152. 15 U.S.C. § 1051 (2002).

153. 15 U.S.C. § 1052 (2006).

154. Gault & Koebler, *supra* note 151.

155. *Id.*

156. *Id.*

157. *Id.*

158. 17 U.S.C. § 109 (2008).

159. Joint Statement on Trademark Counterfeiting Legislation, 130 CONG. REC. H12077, H12079 (Oct. 10, 1984).

160. *True Meaning of "Right to Repair," Zero = Abundance*, INTERACTION GREEN, <http://www.interactiongreen.com/true-meaning-right-to-repair/> (last visited Feb. 16, 2020).

161. See U.S. COPYRIGHT OFFICE, *supra* note 100.

162. *Id.*

Further, authorized repair facilities are not easily accessible to everyone.¹⁶³ For example, if you're one of the two million people living in Nebraska, you have access to only one Apple store, and it is potentially located up to two hours away.¹⁶⁴

Geographical restrictions, however, are not the only hurdles consumers and repairers have to endure, since forced obsolescence and poor manufacturer support are at the core of right to repair advocacy. For example, Samsung was so slow to release an update to fix a broken application programming interface in its refrigerators that users had to hack the refrigerator software to fix it themselves.¹⁶⁵

Manufacturers prefer that consumers upgrade their device and often make repairs uneconomical by refusing to perform viable repairs or by charging exorbitant fees to do so.¹⁶⁶ Similarly, companies sometimes do not sell replacement parts or will sell them at big markups.¹⁶⁷ For example, Apple lobbied against making repair parts and information available to repairers.¹⁶⁸ Additionally, many authorized Apple repair providers are heavily restricted in the repairs they can perform.¹⁶⁹ For example, Apple's authorized service providers are prohibited from replacing an iPhone charging port, a ten-minute repair that costs about \$30.¹⁷⁰ One repair shop owner suggests that he would lose 75% of his business if he were to become Apple certified.¹⁷¹ In other cases, replacement parts are so difficult to get from the OEM that people instead salvage them from broken equipment.¹⁷² For example, a prominent tech YouTuber, Linus Sebastian,

163. Jason Koebler, *Apple: iPhones Are Too 'Complex' to Let You Fix Them*, MOTHERBOARD (Sept. 22, 2017, 9:30 AM), http://motherboard.vice.com/en_us/article/xwgg8z/apple-iphones-are-too-complex-to-allow-unauthorized-repair.

164. Wiens, *supra* note 1.

165. iFixit, *Repair Radio Episode 1: Meet the Leaders of the Right to Repair Movement*, YOUTUBE (Jan. 31, 2019), http://www.youtube.com/watch?v=y-zU8f_olwU&feature=youtu.be&t=1262.

166. Alex Shprinsten, *'Complete Control': Apple Accused of Overpricing, Restricting Device Repairs*, CBC NEWS (Oct. 21, 2018, 4:00 AM), <http://www.cbc.ca/news/thenational/complete-control-apple-accused-of-overpricing-restricting-device-repairs-1.4859099>.

167. Proctor, *supra* note 14.

168. Jason Koebler, *Apple Is Lobbying Against Your Right to Repair iPhones, New York State Records Confirm*, MOTHERBOARD (May 18, 2017, 7:00 AM), http://motherboard.vice.com/en_us/article/nz85y7/apple-is-lobbying-against-your-right-to-repair-iphones-new-york-state-records-confirm.

169. Koebler, *supra* note 10.

170. Koebler, *supra* note 163.

171. Koebler, *supra* note 10.

172. Wiens & Gordon-Byrne, *supra* note 3.

broke the glass screen on his brand new iMac computer.¹⁷³ Apple refused to do the repair and suggested that Sebastian just buy a new computer.¹⁷⁴ Instead, Sebastian accessed grey market parts and completed the repair himself.¹⁷⁵

Opponents' concerns over consumer safety are also unfounded. For example, fifteen-year-old Moses Buckwalter operates a repair shop out of his home in Pennsylvania.¹⁷⁶ He fixes everything from MacBooks to iPhones.¹⁷⁷ If Buckwalter can do it, so can you.

In another instance, the Apple Store in Toronto quoted an Apple customer \$1200 for "significant repairs" to their MacBook laptop.¹⁷⁸ The Apple Store encouraged the customer to buy a new MacBook because of the high cost of repair.¹⁷⁹ Yet, a third-party repairer was able to repair the device for free by reconnecting a dislodged pin.¹⁸⁰ The repairer said a replacement pin would cost between \$75 and \$150.¹⁸¹

Manufacturers want to limit this type of repair.¹⁸² Apple has, in multiple instances, issued software updates that rendered iPhones repaired by third parties inoperable.¹⁸³ A federal court in Australia fined Apple \$6.7 million for these practices after they disabled 275 customers' devices with an iOS (Apple's mobile operating system) software update because the devices were repaired by a third party.¹⁸⁴ Australian law provides that customers are entitled to a repair or replacement, and sometimes a refund, if a product is faulty.¹⁸⁵ The Australian Federal court ruled that Apple could

173. Linus Tech Tips, *Is Apple's Behavior ILLEGAL??—iMac Pro Repair Pt. 2*, YOUTUBE (July 10, 2018), <http://www.youtube.com/watch?v=F8JCh0owT4w>.

174. *Id.*

175. *Id.*

176. *See Apple Repair*, MOSES BUCKWALTER, <http://mosesbuckwalter.com/applerepair> (last visited Apr. 1, 2019).

177. *Id.*

178. Shprinsten, *supra* note 166.

179. *Id.*

180. *Id.*

181. *Id.*

182. Matthew Gault, *The New iOS Update Killed Touch Functionality on iPhone 8s Repaired with Aftermarket Screens*, MOTHERBOARD (Apr. 9, 2018, 2:18 PM), http://motherboard.vice.com/en_us/article/59jwvz/iphone-8-aftermarket-touchscreens-ios-update.

183. *Id.*; Mike Cherney, *Apple Fined as Customers Win a Right-to-Repair Fight*, WALL ST. J. (June 19, 2018, 5:15 AM), <http://www.wsj.com/articles/apple-fined-as-customers-win-a-right-to-repair-fight-1529399713>; Nathan Proctor, *Countries Are Taking Apple to Court Over Right to Repair—and Sometimes, They're Winning*, U.S. PIRG (July 9, 2018), <http://uspirg.org/blogs/blog/usp/countries-are-taking-apple-court-over-right-repair%E2%80%8A%E2%80%94and-sometimes-they%E2%80%99re-winning>.

184. Cherney, *supra* note 183; Proctor, *supra* note 183.

185. Cherney, *supra* note 183.

not nullify consumer guarantees because an iPad or iPhone was repaired by someone other than Apple.¹⁸⁶ Apple later backtracked, claimed the iOS update was a mistake and issued an additional software update to remedy the issue.¹⁸⁷ Yet, new Apple Macbooks have shipped with a similar “kill switch” that holds the threat of your laptop being disabled if you or a non-Apple authorized repair shop tinkers with it.¹⁸⁸

Apple is not the only manufacturer using these predatory practices.¹⁸⁹ Microsoft released a mandatory firmware update for its Xbox that rendered third-party memory cards unusable—this update forced consumers to purchase Microsoft memory cards.¹⁹⁰ In 2012, Nikon brought all repairs in-house and no longer provided replacement parts to third-party repair shops.¹⁹¹ Additionally, manufacturers intentionally make it physically difficult to repair their products.¹⁹² Proprietary screws and glued-down batteries are now common industry practices.¹⁹³ Often, repair shops have to reverse engineer these tools to complete repairs.¹⁹⁴

Proponents also assert that current practices are unsustainable because of the contribution to e-waste. E-waste is incredibly toxic; a United Nations’ report found that e-waste is the fastest growing part of waste stream in the world, with tens of millions of tons discarded annually.¹⁹⁵ It is estimated that 350,000 phones are thrown out each day.¹⁹⁶ Volatile and hazardous batteries end up in landfills because only a small fraction of electronics are recycled.¹⁹⁷ Many of the materials, including rare earth metals, are not being recovered at all.¹⁹⁸ For example, Apple requires companies that recycle its products to sign a must-shred clause.¹⁹⁹ This prevents those products from being repaired or reused.²⁰⁰

186. *Id.*

187. *Id.*

188. Vaute, *supra* note 130.

189. McSherry, *supra* note 2.

190. *Id.*

191. Wiens, *supra* note 1.

192. *Id.*

193. *Id.*

194. *Id.*

195. Panne, *supra* note 5; Proctor, *supra* note 14; Wiens & Gordon-Byrne, *supra* note 3.

196. Nathan Proctor, *After Apple Slows Phones, Interest in Repair Spikes*, U.S. PIRG (Feb. 1, 2018), <http://uspirg.org/news/usp/after-apple-slows-phones-interest-repair-spikes>.

197. Wiens, *supra* note 135.

198. *Id.*

199. Jason Koebler, *Apple Forces Recyclers to Shred All iPhones and MacBooks*, MOTHERBOARD (Apr. 20, 2017, 1:51 PM), http://motherboard.vice.com/en_us/article/yp73jw/apple-recycling-iphones-macbooks.

200. *Id.*

Increasing the life of consumer products is at the core of right to repair advocacy.²⁰¹ A study by the German government suggests that new technology including smartphones, tablets, televisions, washing machines, and tractors break more easily than before.²⁰² The Italian antitrust agency fined Apple and Samsung \$5.7 million each for software updates that effectively slowed down older model phones.²⁰³ Apple was fined an additional \$5.7 million for failing to inform consumers on how to care for and replace iPhone batteries.²⁰⁴ The Institute of Electrical and Electronics Engineers states that extending a phone's life from one to four years "decreases its environmental impact by about 40 percent."²⁰⁵ Studies show that 87% of American consumers are willing to change their behavior and buy something with a social or environmental benefit.²⁰⁶ Sustainability is at the heart of right to repair; current practices are not sustainable.

IV. THE FUTURE OF RIGHT TO REPAIR

In 2018, the New York legislature introduced the Fair Repair Act; however, the bill proposal never made it to a vote.²⁰⁷ Apple lobbied to ensure it was killed.²⁰⁸ Companies including Toyota, Verizon, Medtronic, Caterpillar, Facebook, AT&T, and Johnson & Johnson spent a combined \$102,160 to oppose the proposal.²⁰⁹ In comparison, the Repair Association contributed \$5162 to support the bill.²¹⁰ It's no surprise the bill was dead in the water.

Model legislation has been created by the Repair Association to assist legislators in creating bills.²¹¹ The model legislation seeks to make available documents, parts, tools, and information to bypass DRM measures to facilitate repair.²¹²

201. See U.S. COPYRIGHT OFFICE, *supra* note 100.

202. Wiens & Gordon-Byrne, *supra* note 3.

203. Vaute, *supra* note 130.

204. *Id.*

205. Koebler, *supra* note 163.

206. Vaute, *supra* note 130.

207. Jamie Allendorf, *How Big Tech Stopped Right to Repair in New York*, MEDIUM (Aug. 2, 2018), <http://medium.com/u-s-pirg/how-big-tech-stopped-right-to-repair-in-new-york-9109a7565596>.

208. *Id.*

209. *Id.*

210. *Id.*

211. The Repair Association, previously the Digital Right to Repair Coalition, represents everyone involved in repair and reuse of technology. *Model State Right-to-Repair Law*, REPAIR ORG. (July 24, 2018), <http://repair.org/s/Right-to-repair-Model-state-law-7-24-18.docx>.

212. *Id.*

Twenty U.S. states are currently considering right to repair bills.²¹³ To date, bills have passed out of committee in Washington, Illinois, and Wyoming.²¹⁴ In Washington, a proposed bill would prohibit manufacturers from gluing down batteries, a common hurdle for repairers.²¹⁵ The legislation also intends to provide consumers with access to information and tools necessary for repair.²¹⁶ Unsurprisingly, representatives from Apple, Google, and Microsoft were present at hearings to oppose the bill.²¹⁷ The first state bill that passes will be a major milestone for the right to repair. Similar to car manufacturers, manufacturers of other products will likely comply with these state laws nationwide because they will not want to produce individual products for different jurisdictions.²¹⁸

Right to repair bills are also being considered in Canada and the European Union (EU).²¹⁹ A recently enacted EU bill requires refrigerator manufacturers to provide consumers with spare parts.²²⁰ Further, the manufacturers have to make the refrigerators easier to disassemble.²²¹ A recent bill proposed in Canada requires manufacturers to make diagnostic tools, repair manuals, and official parts available for repair.²²²

Right to repair is about bringing power back to consumers and is founded on concepts of utilitarianism and consumer autonomy. The 2018 exemptions to the DMCA were a huge step in the right direction in the fight for right to repair. However, these exemptions only grant consumers *the right* to repair. Repairers still need access to parts, diagnostic tools, and repair manuals to fix devices. Proponents are hopeful that these measures will be passed through state-level legislation. Until then, you must fight for your right . . . to repair.

213. Nathan Proctor, *Right to Repair Wraps Up a Big Year*, U.S. PIRG (Dec. 26, 2019), <http://uspirg.org/blogs/blog/usp/right-repair-wraps-big-year>.

214. *The Year in Repair*, REPAIR.ORG. (Jan. 2, 2019), <http://repair.org/news/2019/1/2/the-year-in-repair>.

215. W.A. Legis. Assembly Reg. Session 2017-2018 (W.A. 2017).

216. *Id.*

217. Jason Koebler, *Washington Bill Would Make It Illegal to Sell Electronics That Don't Have Easily Replaceable Batteries*, MOTHERBOARD (Jan. 26, 2018, 8:36 AM), http://motherboard.vice.com/en_us/article/zmqa49/washington-right-to-repair-iphone-cpu-throttling.re.

218. Jordan Pearson, *Right to Repair Legislation Is Officially Being Considered in Canada*, MOTHERBOARD (Feb. 21, 2019, 1:26 PM), http://motherboard.vice.com/en_us/article/gyawqy/right-to-repair-legislation-is-officially-being-considered-in-ontario-canada.

219. Matthew Gault, *Protesters Are Slowly Winning Electronics Right-to-Repair Battles in Europe*, MOTHERBOARD (Dec. 14, 2018, 6:00 AM), http://motherboard.vice.com/en_us/article/9k487p/protesters-are-slowly-winning-electronics-right-to-repair-battles-in-europe; Pearson, *supra* note 218.

220. Pearson, *supra* note 218.

221. *Id.*

222. *Id.*