

Right to Repair (R2R) in Agriculture



Executive Summary

The Right to Repair (R2R) in agriculture is the ability of farmers and farm operators to fix their own farm equipment without facing legal repercussions from manufacturers. In Missouri, third-party repair technicians are not allowed to access a device's software. Electronics manufacturers who develop modern farm equipment, such as combines, have exclusionary practices in place that allow future manufacturers' revenue streams after the purchase has been made. Repair and aftermarket sales account for about 10% to 40% of revenue for industrial companies,¹ and aftermarket sales can account for substantial economic activity in rural communities.¹⁷ [HB975](#) would allow owners of products purchased or used in Missouri and independent repair providers to have the right to access the same diagnostic and repair information that manufacturers supply to authorized repair providers.

Highlights

- Manufacturers restrict repairs by refusing to show diagnostics or manuals, bundling products and services, limiting or stopping third-party repairs, and adding technical obstacles to prevent access to the code or the modification of software.⁷
- For farm equipment, software technological protection measures (TPMs) that prevent access to the code or modification of software prohibit farmers from being able to find third-party repair markets.¹²
- Software restrictions created by TPMs and network connectivity can prevent repair or modification to equipment by rendering machinery inoperable unless "activated" by OEM approved technicians with specialized tools or software.¹⁶
- Excessive authorization requirements and repair restrictions limit farmers' access to repair options, drive up costs for consumers, increase wait times and inhibit growth activities of repair shops and servicing in rural communities.^{7,17,18}
- Under the Magnuson-Moss Warranty Act (Warranty Act), manufacturers cannot forcefully tie their services to the purchased product, unless it is free to the customer.⁷
- 22 states are working on repair friendly legislation that would allow repairability and reopening of repair markets, such as access to John Deere's software and diagnostic equipment.

Limitations

- Even if legal reforms in repair and servicing at the state level were made, federal intellectual property laws can be used to substantially interfere with consumer state rights to repair. Intellectual property law reforms may be required.

This science note was prepared on March 2021 by MOST Policy Initiative, Inc. a nonprofit organization aimed to improve the health, sustainability, and economic growth of Missouri communities by providing objective, non-partisan information to Missouri's decisionmakers. This note was prepared in partnership with Anthony Rosborough, European University Institute and Daniel Hanley with Open Markets Institute. For more information, contact Dr. Eleni Bickell, Agriculture & Economic Development Fellow – eleni@mostpolicyinitiative.org.

- Some existing federal copyright laws, such as the Digital Millennium Copyright Act (DMCA), can come in conflict with other existing federal antitrust laws, such as the Magnuson-Moss Warranty Act (Warranty Act) or the Sherman Antitrust Act or Federal Trade Commission (FTC) Act.
-

Research Background

Over the last century, manufacturers have increasingly restricted repair using a variety of techniques, such as introducing software into their products, requiring specialized and custom tools, and restricting access to product manuals and repairing instructions.² The growing number of products that include computerization and technological protection measures (TPM)-protected software into their design and function has allowed many manufacturers to retain considerable control over the manner of repair and choice of technician. As a response, the R2R movement, which started in the late 1980s,¹ requires manufacturers to assist consumers in repairing and maintaining products they have purchased by offering consumers repair documentation, spare parts protected by industrial design, and patented special tools needed to perform repairs. The R2R in agriculture is inspired by the automotive industry; In 2012, Massachusetts passed the United States' first Motor Vehicle Owners' Right to Repair Act, which required automobile manufacturers to provide the necessary documents and information to allow anyone to repair their vehicles. Since then, car manufacturers voluntarily have agreed to make the same information and tools they provide to franchised dealers available to independent repair shops.

Effects of restrictions on repair

By excluding independent parts, manufacturers and technicians, manufacturers limit or destroy otherwise attractive business opportunities, **reduce product choice, and can raise prices for consumers.** This is specifically true for repair in **farm equipment, where profit margins on repairs can be five times higher than the margins for the sale of equipment,**¹⁵ and some corporations may bring in more revenues from repairs than they do from the sale of goods. According to the National Automobile Dealers Association, a typical car dealer derives 48% of its profits from repairs, compared to just 26% from car sales.⁶ Based on a 2017 survey done by the American Automobile Association (AAA) 33% of Americans cannot afford to pay for an unexpected car repair bill, and according to the U.S. Bureau of Labor Statistics, when adjusted for inflation, the average cost of car repairs was 61% higher in 2017 than it was in 2000.⁵ The rise in cost may be related to both the rising cost of the standard parts of the cars and the growth of costly electronics increasingly embedded in cars and farm equipment due to manufacturer monopolies.⁷ Such practices may stagnate the market for generic parts, which often cost 25% to 50% less and can save consumers an estimated \$1.5 billion a year.⁷

Effects on rural communities

More than 1 in 3 Missourians or 37%- live in rural Missouri.²⁰ However, rural communities are often located far from manufacturer authorized repair shops or technicians; for instance, there are only 14 John Deere repair shops in Missouri.²¹ Additionally, **by restricting access to critical**

parts, tools, or repair shops, manufacturers can take away valuable market opportunities for repair business opportunities where independent shops can provide timely repair to the customer. Centralized repair markets **not only limit farmers' access to repair options**, but also increase wait times for repair, drive up costs and prevent farm operators from doing their work, often during the busiest times of the year (e.g., during harvest season).

Decentralized repair markets help economic growth and employment, since independent repair technicians and part suppliers are often local, which strengthens the fabric of rural communities.^{16,17}

Effects on innovation & economic growth

As much as restrictions on repair pose challenges for farmers and independent technicians, they also curtail innovation and economic growth in the technology sector. Profitable industries with strong export activity and employment creation based in the U.S. create and distribute add-on equipment for Original Equipment Manufacturer or OEM-agricultural machinery.^{10,22} Known as the "short line", these businesses rely on OEM equipment as their host platform to develop innovative products that serve niche and crop-specific needs of farmers. As independent part suppliers, restrictions on repair also preclude the viability of short line products.²³ The OEM attempts stifle open innovation in this way harms not only the farmers who rely upon these customized products, but the profitable and tech-focused companies who build them and those whom they employ. Overall, American innovation in agriculture and the rural communities upon which it is built depend on the ability to bypass the TPMs utilized by OEMs.^{16,18}

Challenges to these practices

On a federal and state level, the manufacturers' exclusionary tactics to restrict competition in aftermarkets have been challenged to be illegal as antitrust laws that conduct **tying, exclusive dealing, refusals to deal, and to violate consumer protection statutes by improperly violating warranties and repair terms**. For example, under the Magnuson-Moss Warranty Act (Warranty Act), "manufacturers cannot forcefully tie their services to the purchased product, unless it is free to the customer."^{7, p. 21} Also, "The Warranty Act and FTC regulations prevent manufacturers from voiding the consumer's warranty if repair services are performed by a third party or if non genuine, recycled, or aftermarket parts are used."^{7, p. 21}

Legal reforms to repair-friendly legislation can be found both at the state and federal level. State laws could require manufacturers to share the information necessary for repair. **Digital rights management (DRM) tools or technological protection measures are control technologies for restricting the use of proprietary hardware and copyrighted works. Copyright reform could limit or remove DRM, which states cannot do.**

Using the Sherman Act, the FTC can challenge the practice of exclusivity because the manufacturers marginalize existing rivals and raise entry barriers for prospective competitors.¹³ Similarly, using Section 6 rule-making authority under the FTC Act to define unfair methods of

competition, **FTC can challenge refusals to deals, tying, and exclusive deals** that cannot be challenged under present interpretations of the Sherman Act.¹⁴

Copyright Law vs. Monopolies

By not allowing software and diagnostic equipment to be available to farmers or third-party repairs, major manufacturers **effectively reserve the entire secondary market for themselves and create a de facto monopoly**.¹² Courts around the U.S. have held that corporations cannot exploit their acquired copyright and intellectual property rights to dominate markets in a way that violates antitrust law.⁷ On copyright law specifically, the Library of Congress under Section 1201 of the DMCA has broad authority to create exceptions to copyrightable material.⁴ Similar to its ruling in 2015, the Library of Congress has the authority to create additional exceptions for copyrighted works when used in the context of repair.⁷ An example of antitrust/competition law and the use of TPMs under the DMCA to preclude downstream market competition, is the Lexmark International Inc vs. Static Control Components (2014) case.¹⁹

Similar legislation

Federal and state governments have the legal standing to challenge manufacturers' exclusionary tactics and to promote competition in aftermarkets. Evidence from around the country shows that **farmers are unable to sufficiently repair tractors** purchased from major manufacturers because they withhold the software necessary to do so.³ Moreover, sensors and controller networks, which have become necessary for tractors and combine harvesters to function, are the highest points of failure on farming machinery as opposed to hardware damage that can be fixed by the farmer.³

To date, 22 states have proposed R2R legislation, demonstrating that farmers want to learn how to fix their own equipment and build on-farm ingenuity. For example, proposed legislation in Massachusetts, Nebraska, New York, Minnesota, California and others **will require companies to publish repair instructions and descriptions of the components used, and to ensure that spare parts and tools are also available to independent workshops, and even at the same price as their own authorized workshops**. Similar bills are being discussed in **Iowa, Kansas, and Illinois**, requiring farming equipment manufacturers to make software required for repairs available to consumers for purchase. Illinois House Bill 3061, introduced as the "Digital Right to Repair Act" in February, would mandate that manufacturers provide farmers with the same diagnostic materials available to official repair providers by 2022. Moreover, the American Farm Bureau Federation, the National Corn Growers Association, the National Farmers Union and other stakeholders are working with the Electronic Frontier Foundation to petition the U.S. Copyright Office to exempt farm equipment from the anti-modification provisions of the Digital Millennium Copyright Act (DMCA).

References

1. David Simchi-Levi, Operation Rules: Delivering Customer Value through Flexible Operations 28–29 (2010) in Alwyn Scott, Boeing Takes on Peers, Partners in Bid for Replacement Parts Business, Reuters (Oct. 24, 2016, 1:26 AM), <https://www.reuters.com/article/us-boeing-aftermarket-analysis/boeing-takes-on-peers-partners-in-bid-for-replacement-parts-businessidUSKCN12O0EX>

2. <https://www.ifixit.com/Teardown/AirPods+Teardown/75578>
3. <https://www.dailyherald.com/business/20210303/farmers-ask-for-right-to-repair>
4. Daniel Cadia, Fix Me: Copyright, Antitrust, and the Restriction on Independent Repairs, 52 U.C. Davis L. Rev. 1701, 1710 (2019).
5. Where Does the Car Dealer Make Money?, Edmunds (June 13, 2019), <https://www.edmunds.com/carbuying/where-does-the-car-dealer-make-money.html>.
6. <https://www.forbes.com/sites/jimgorzelay/2018/02/15/the-sum-not-the-whole-is-greater-when-it-comes-to-the-skyrocketing-cost-of-car-parts/#36e1852f53df>.
7. Hanley, D. A., Kelloway, C., & Vaheesan, S. (2020). *Fixing America: Breaking manufacturers' aftermarket monopoly and restoring consumers' right to repair*. https://static1.squarespace.com/static/5e449c8c3ef68d752f3e70dc/t/5ea8a6d93b485d0feb9b5d6b/1588111098207/Report_RightToRepair_HanleyKellowayVaheesan-1.pdf
8. Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 80 Fed. Reg. 65944–64 (Oct. 28, 2015), *supra* note from 7.
9. E.g., <https://www.theverge.com/2019/4/2/18292177/microsoft-ebooks-refund-stops-selling-digital-books-store> <https://dealbook.nytimes.com/2014/09/24/miss-a-payment-good-luck-moving-that-car/?mtrref=undefined&gwh=4946B6B8EE71E625CF713C0D810D784F&gwt=regi&assetType=R> EGIWALL
10. <https://artsway-mfg.com/>
11. See generally *Tampa Elec. Co. v. Nashville Coal Co.*, 365 U.S. 320 (1961); *ZF Meritor, LLC v. Eaton Corp.*, 696 F.3d 254 (3d Cir. 2012) (“An exclusive dealing arrangement is an agreement in which a buyer agrees to purchase certain goods or services only from a particular seller for a certain period of time.”); *Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991 (9th Cir. 2010).
12. Rosborough, A. D. (2020). Unscrewing the future: the right to repair and the circumvention of software TPMs in the EU. *J. Intell. Prop. Info. Tech. & Elec. Com. L.*, 11, 26.
13. See *United States v. Dentsply Int'l, Inc.*, 399 F.3d 181, 187–96 (3d Cir. 2005) (holding that a dental product supplier violated Sherman § 2; acquisition and maintenance of substantial market power, combined with creation of high price umbrella, evidenced power to exclude through exclusive dealing arrangements that imposed limitations on dental product dealers, creating artificially high barriers to entry and limiting product choices of both dealers and laboratories), cert. denied, 546 U.S. 1089 (2006), *supra* note from 7.
14. 15 U.S.C. § 46(g); see also *FTC v. Sperry & Hutchinson Co.*, 405 U.S. 233, 239 (1972), *supra* note from 7.
15. <https://www.chicagobusiness.com/manufacturing/why-deere-and-cat-dont-want-customers-do-it-themselves>.
16. Rosborough, A. D. (personal communication, March 2021).
17. <https://open.canada.ca/data/en/dataset/6c54a0f9-73d2-4b59-b67b-00b9305081e0>
18. <https://policyoptions.irpp.org/magazines/february-2021/the-serious-hidden-problem-facing-canadas-agricultural-innovators/>
19. <https://www.eff.org/cases/lexmark-v-static-control-case-archive>
20. <https://worldpopulationreview.com/states/missouri-population>
21. https://dealerlocator.deere.com/servlet/country=US?locale=en_US
22. <http://shortlineag.com/>
23. <https://www.realagriculture.com/2020/03/ag-manufacturers-say-uneven-intellectual-property-rules-could-freeze-them-out-of-u-s-market/>

