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Smart Cars, Telematics, and Repair

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Leah Chan Grinvald & Ofer Tur-Sinai*

ABSTRACT

Recent years have seen a surge in the use of automotive telematics. Telematics is the integration of telecommunications and informatics technologies. Using telematics in cars enables transmission of data communications between the car and other systems or devices. This opens up a wide range of possibilities, including the prospect of conducting remote diagnostics based on real-time access to the vehicle. Yet, as with any new technology, alongside its potential benefits, the use of automotive telematics could also have potential downsides. This Article explores the significant negative impact that the growing reliance on telematics systems could have on competition in the market for repair services.

Our analysis highlights two main areas where the use of telematics for vehicle diagnostics may pose a threat to competition and consumer choice. First, we focus on the manner by which manufacturers communicate with their customers via the telematics system. Due to the special relationship between car manufacturers and their consumers, which is often based on trust and loyalty, alongside the “captive audience” status of drivers, we argue that communications emanating from the car’s telematics system could be deceptive. Second, we explore the negative impact that the shift away from on-board diagnostics to telematics could have on independent repair shops’ access to diagnostic information.

Fortunately, the law can adapt to keep pace with these new technological and commercial developments. This Article articulates the combined multi-prong, multi-agency policy approach needed to maintain an effective right to repair cars in the new age of telematics. Among other things, our analysis supports an update of state consumer protection legislation and an increased policing by the Federal Trade Commission of practices employed by car manufacturers. In addition, we highlight the need to consider certain amendments to intellectual property laws that effectively aid car manufacturers in maintaining exclusive control over their telematics systems and diagnostic data.

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INTRODUCTION

Imagine yourself driving your car home from work. Suddenly, the “Check Engine” light on your dashboard turns on. A few seconds later, an authoritative voice emanating from the vehicle’s speakers alerts you of a bad catalytic converter or a problem with

one of the car's oxygen sensors. It then continues to inform you of the nearest authorized dealership, where the service department can fix the problem. You can even use a click-to-call button installed on your dashboard that would put you in direct contact with that dealership, enabling you to make an appointment right away. What would you do?

It is safe to assume that in such a scenario, many people would be inclined to fix their cars at the authorized dealership, if not immediately, then at some later point.¹ Yet, even if a consumer decides to take her car to her loyal, local garage rather than to the dealership, there is no guarantee that the mechanic would be able to diagnose and repair the problem, certainly not as efficiently as the dealership could.² This is, in large part, due to the fact that the mechanic would not have access to the same diagnostic information that is available to the manufacturer and its authorized dealerships in real time.³

The scenario described above is not science fiction, but rather a very plausible scenario, in light of major technological advances in the field of car diagnostics⁴ and the growing connectivity of cars.⁵ In recent years, the car industry has moved towards producing “smarter” cars with telematics systems. “Telematics” is an emerging interdisciplinary technological field, integrating telecommunications and informatics.⁶ Telematics systems employed in vehicles allow real-time information from the vehicle's operating system, including diagnostic information, to be transmitted wirelessly. While

1. See Adrian Ma, *Your Car Talks to the Manufacturer. Advocates Want It to Talk to You, Too*, WBUR: BOSTONMIX (Aug. 6, 2019), <https://www.wbur.org/bostonmix/2019/08/06/right-to-repair-ballot-measure> [<https://perma.cc/8A6K-N9C7>] (quoting Barry Steinberg, an independent auto shop repair owner: “If Big Brother comes on in your car and says, ‘Go to your Honda dealer,’ 90% of people are going to listen to them . . .”).

2. See Sarah Kessler, *The Connected Car of the Future Could Kill Off the Local Auto Repair Shop*, QUARTZ (Sept. 5, 2017), <https://qz.com/1054261/the-connected-car-of-the-future-could-kill-off-the-local-auto-repair-shop> [<https://perma.cc/2D3D-8YM3>].

3. See *id.* (describing how some manufacturers are routing data through their own servers).

4. See, e.g., Colin Pawsey, *Advanced Automotive Diagnostics Systems—From Diagnostics to Prognostics*, AUTO. IQ (Nov. 13, 2018), <https://www.automotive-iq.com/autonomous-drive/articles/advanced-automotive-diagnostics-systems-from-diagnostics-to-prognostics> [<https://perma.cc/7MBJ-VLLR>] (describing developments in the field, “including the use of artificial intelligence and deep learning neural networks to develop advanced prognostic systems”).

5. See I. Wagner, *Connected Cars – Statistics & Facts*, STATISTA (Sept. 15, 2020), <https://www.statista.com/topics/1918/connected-cars> [<https://perma.cc/V4LQ-YB8D>] (projecting that out of the more than 1 billion cars used globally, sales of connected cars would hit approximately 28.5 million in 2019).

6. See, e.g., Xiaoguang Tian, Victor R. Prybutok, Fouad H. Mirzaei & Catalin C. Dinulescu, *Millennials Acceptance of Insurance Telematics: An Integrative Empirical Study*, 23 AM. BUS. REV. 156, 158 (2020) (“Automotive telematics is described as the integration of telecommunications and informatics technologies applied to the transportation industry.”).

the ability to obtain real-time diagnostic information about a car is a positive development for car safety and possible vehicle longevity, as with any new technology, there are some significant potential downsides. This Article focuses on the potential negative effect of the rise of telematics on competition in the market for car repairs.⁷

Up until recently, diagnostic data generated by cars could generally be retrieved by connecting to a standard on-board diagnostics port (OBD port).⁸ State law in Massachusetts and a nation-wide memorandum of understanding (MOU) between major car manufacturers and the repair industry guaranteed consumers and independent repair shops the ability to access diagnostic information available through the OBD port.⁹ With the switch to telematics systems, however, such access is currently at risk,¹⁰ as these systems are not standardized across different car manufacturers, are typically

7. In this Article, we are focusing on the equilibrium among the various players in the marketplace for vehicle repair. There are a multitude of other potential harms, including privacy and cybersecurity, which we do not focus on in this piece. *See, e.g.*, Andy Greenberg, *Hackers Remotely Kill a Jeep on the Highway—With Me in It*, WIRED (July 21, 2015, 6:00 AM), <https://www.wired.com/2015/07/hackers-remotely-kill-jeep-highway> [<https://perma.cc/F6TZ-SDYF>] (discussing the dangers of car hacking); Yossi Vardi, *What to Expect from Car Hackers in 2020 and Beyond*, VENTUREBEAT (Dec. 22, 2019, 10:25 AM), <https://venturebeat.com/2019/12/22/what-to-expect-from-car-hackers-in-2020-and-beyond> [<https://perma.cc/FZX6-AU7J>] (discussing the need for cybersecurity to proactively address the threat of car hacking); Geoffrey Fowler, *Driving Surveillance: What Does Your Car Know About You?*, WASH. POST (Dec. 17, 2019, 7:00 AM), <https://www.washingtonpost.com/technology/2019/12/17/what-does-your-car-know-about-you-we-hacked-chevy-find-out> [<https://perma.cc/TM63-7G9L>] (discussing the trove of data that cars can collect regarding its drivers); Davey Winder, *Your New Car Is a Hacker Magnet — Automotive Industry Disconnect to Blame*, FORBES (Feb. 6, 2019, 7:00 AM), <https://www.forbes.com/sites/daveywinder/2019/02/06/your-new-car-is-a-hacker-magnet-automotive-industry-disconnect-to-blame/#16b88b3c3b76> [<https://perma.cc/5CHL-GN24>] (describing cybersecurity risks in the automotive industry). In addition, while we focus on the repair market in the United States, it is important to note that there are similar issues with cars and repair worldwide. For example, the Australian government is considering a mandate on sharing repair information for motor vehicles, albeit on a limited basis. *See* Leanne Wiseman, Kanchana Kariyawasam & Lucas Davey, *The Mandatory Repair Scheme for Motor Vehicles 2019: Australia's First Response to the International Right to Repair Movement?*, 48 AUSTL. BUS. L. REV. 218, 231 (2020) (analyzing the proposed mandate).

8. *See* Kessler, *supra* note 2.

9. *See* MASS. GEN. LAWS ch. 93K, § 2 (2019); Memorandum of Understanding Among Automotive Aftermarket Industry Association, Coalition for Auto Repair Equality, Alliance of Automobile Manufacturers and Association of Global Automakers (Jan. 15, 2014), <http://www.njgca.org/wp-content/uploads/Right-to-Repair-national-MOU-01-23-14.pdf> [<https://perma.cc/M67B-339K>] [hereinafter MOU]. In addition, there is a separate MOU for commercial vehicles. *See* Memorandum of Understanding: National Commercial Vehicle Service Information (Aug. 12, 2015), <https://www.autocare.org/workarea/DownloadAsset.aspx?id=2646&gmssopc=1> [<https://perma.cc/T8YL-FXNM>]. In this Article, we will use “MOU” to refer to the January 2014 version, which focused on personal vehicles (or “light duty” vehicles).

10. *See* *Right to Repair*, AUTO CARE ASSOC., <https://www.autocare.org/government-affairs/issues/right-to-repair> [<https://perma.cc/2PTH-WM7N>] (noting the exclusion of telematics from the Massachusetts law and national agreement); Kessler, *supra* note 2; Ma, *supra* note 1.

secured by technological protection measures, and are excluded from the scope of the legislation and the MOU.¹¹

At the same time, the manufacturers' exclusive control over telematics systems enables them to offer repair services and associated products in a coercive manner that may amount to deceptive advertising.¹² The coercive nature of the communications emanating from the system stems from the special relationship that car manufacturers have with their consumers, often based on trust and loyalty; the "captive audience" status of the driver; and the information asymmetry between the parties.¹³

These two interrelated features brought about by the manufacturers' increasing use of telematics systems—exclusive control over diagnostic data and coercive advertising of repair and maintenance services—pose a serious threat to competition in the market for car repairs and endanger consumers' right to repair (or choice of where to repair) their cars.¹⁴

This Article posits that maintaining competition in the market for car repairs is vital. The justifications for a right to repair include, inter alia, the need to protect consumers' sense of autonomy and enable them to realize an important aspect of product ownership, ensure competitive pricing of repair and maintenance services and associated products, minimize environmental waste, and encourage innovation.¹⁵ Maintaining competition in the automobile repair market is particularly important considering the centrality of all types of vehicles to the economy. The passenger car remains one of the more valued personal property items of most Americans.¹⁶ A recent Gallup poll found that eighty-six percent of Americans own or lease an automobile or some other type of vehicle, and sixty-four percent of Americans drive daily.¹⁷ Vehicles and

11. See *infra* notes 60–66 and accompanying text.

12. For a detailed discussion, see *infra* Part II.

13. For a detailed discussion of these and other related factors that contribute to the coercive nature of telematics-based communications, see *infra* Section II.A.

14. We use the term "consumer" broadly to include any end user possessing a vehicle, whether it is the vehicle's owner, lessee or driver authorized to use the car, and regardless of whether the use is for personal or business purposes.

15. For a detailed discussion, see *infra* Section I.A.

16. The average price of a new car in 2019 was approximately \$36,000. Anna Hecht, *Car Prices Are Increasing—Here's How That Can Hurt Americans*, CNBC (Oct. 22, 2019, 11:42 AM), <https://www.cnbc.com/2019/10/22/car-prices-are-rapidly-increasing-heres-why-thats-bad-for-americans.html> [<https://perma.cc/64LD-AKNA>]. One insurance company estimates that an average renter in a two bedroom apartment has approximately \$30,000 in total personal property. Sienna Kossman, *4 Common Myths About Renters Insurance*, U.S. NEWS (Sept. 12, 2013, 2:00 PM), <https://money.usnews.com/money/personal-finance/articles/2013/09/12/4-common-myths-about-renters-insurance>.

17. Megan Brennan, *83% of U.S. Adults Drive Frequently; Fewer Enjoy It a Lot*, GALLUP (July 9, 2018), <https://news.gallup.com/poll/236813/adults-drive-frequently-fewer-enjoy-lot.aspx> [<https://perma.cc/V8PL-EFC3>].

other forms of equipment also play a significant role in the agricultural and military spheres.¹⁸ The severity of the harm that could be wrought to the U.S. economy by a manufacturer monopoly over the vehicle repair market is highlighted by national policymakers incorporating a repair agenda into their 2020 presidential campaigns and by the involvement of the Federal Trade Commission (FTC).¹⁹ Notably, the struggle to maintain competition in the vehicle repair market corresponds with a more general effort to preserve the consumers' right to repair their own personal devices (particularly, consumer electronics).²⁰

Unfortunately, with the rise of telematics, the right to repair vehicles is under siege. In order to ensure that manufacturers do not use the new technological abilities to skirt their legal obligations and monopolize the market for car repairs, policy makers must pay due attention to this area. This Article identifies the potential anti-competitive effect of the switch to telematics on the vehicle repair market and explores concrete directions that could be used to tackle the problem.

In order to maintain an effective right to repair cars, we urge policy makers to, *first*, regulate the way in which manufacturers are allowed to communicate to their consumers in their cars,²¹ and *second*, guarantee that access to diagnostic information transmitted via telematics systems remains open to all.²² This Article calls for a combined policy approach, under which various agencies, including state legislatures, courts, the FTC, and Congress, would play significant roles. In addition to unfair competition and consumer protection law, this Article explores the need to consider certain

18. See Elle Ekman, Opinion, *Here's One Reason the U.S. Military Can't Fix Its Own Equipment*, N.Y. TIMES (Nov. 20, 2019), <https://www.nytimes.com/2019/11/20/opinion/military-right-to-repair.html> [<https://perma.cc/HS7U-2A9H>] (concerning the military); Richard Jensen, *Hackers, Farmers, and Doctors Unite! Support for Right to Repair Laws Slowly Grows*, ARS TECHNICA (June 20, 2019, 7:30 AM), <https://arstechnica.com/gadgets/2019/06/hackers-farmers-and-doctors-unite-support-for-right-to-repair-laws-slowly-grows> [<https://perma.cc/4QSN-6ND4>] (concerning farmers).

19. See, e.g., Matthew Gault, *Bernie Sanders Calls for a National Right to Repair Law for Farmers*, VICE (May 5, 2019, 5:48 PM), https://www.vice.com/en_us/article/8xzqmp/bernie-sanders-calls-for-a-national-right-to-repair-law-for-farmers [<https://perma.cc/6Y67-UUX5>]; Makena Kelly, *Elizabeth Warren Comes Out in Support of a National Right-to-Repair Law for Farm Equipment*, THE VERGE (Mar. 27, 2019, 12:08 PM), <https://www.theverge.com/2019/3/27/18284011/elizabeth-warren-apple-right-to-repair-john-deere-law-presidential-campaign-iowa>; *Nixing the Fix: A Workshop on Repair Restrictions*, FTC (July 16, 2019), <https://www.ftc.gov/news-events/events-calendar/nixing-fix-workshop-repair-restrictions> [<https://perma.cc/GR2A-VBJU>] [hereinafter FTC Workshop].

20. See generally Leah Chan Grinstead & Ofer Tur-Sinai, *Intellectual Property Law and the Right to Repair*, 88 FORDHAM L. REV. 63 (2019) (discussing the emergence of a social movement advocating a right to repair consumer products).

21. See *infra* Part II.

22. See *infra* Part III.

aspects of intellectual property law and construe them in a manner that enables the right to repair to be fully implemented.

The remainder of this Article proceeds as follows. In Part I, we provide a brief overview of the various justifications for a right to repair that we discussed in general in an earlier piece, while focusing on specific attributes of the car industry.²³ Next, we provide a historical perspective of the automotive right to repair movement. We also outline in greater detail the developments in vehicle telematics that may impact the repair market and discuss current efforts to update the applicable legal framework to account for such developments. All of this provides the context for the rest of our discussion, which is comprised of two prongs. First, in Part II, we argue that manufacturers have worked hard to create a special relationship with their consumers—one based on trust and loyalty. In light of this special relationship, and considering the “captive audience” status of consumers while they are in their cars, we argue that there is a high probability that manufacturers’ communications emanating from a car’s telematics system will be deceptive. Based on this prospect, we urge the FTC to become more active in policing how manufacturers are communicating repair information to their consumers. Second, in Part III, we argue that the potential competitive harm in the repair market resulting from the manufacturers’ exclusive control over the telematics data feed warrants proactive solutions. These include updating state consumer protection legislation, as well as closely examining the intellectual property laws that effectively aid car manufacturers in maintaining exclusivity over their telematics systems and diagnostic data. The issues surrounding access and control over telematics data are controversial, and this Article’s thesis and arguments will likely face challenges. Therefore, we lay out some of these challenges and offer responses to them in Part IV.

I. THE RIGHT TO REPAIR

In this Part, we briefly discuss the main justifications for a right to repair, with a particular focus on their application in the context of vehicle repairs. We will then turn to a historical overview of legislative and private ordering efforts to secure a right to repair for vehicles and, finally, provide an analysis of why efforts are still needed to safeguard this right.

23. See Grinvald & Tur-Sinai, *supra* note 20, at 83–96.

A. *Justifying a Right to Repair*

1. Consumer Autonomy and Property Rights

One of the most persuasive justifications for a right to repair (at least from a consumer's perspective) is preserving a sense of autonomy, or the ability for the consumer to determine by herself what to do with her own personal things.²⁴ Based on this consideration, we previously argued that at the core of a right to repair is the individual consumer's ability to engage in repair activities.²⁵ While most consumers are not likely to repair their own cars, consumers must nevertheless retain a right to choose how, when, and where to repair their cars in order to uphold their autonomy and a meaningful sense of property ownership.

The sentiment for autonomy is often intertwined with a property/ownership rationale that a consumer should have the ability to repair because they "own" their "stuff."²⁶ This justification is premised on the quid pro quo understanding of a personal property transaction: a consumer pays money for a product, and in return she obtains ownership of that product.²⁷ These two interrelated rationales have been expressed at public hearings on the topic. For example, at a hearing held by the U.S. Copyright Office on access to software for purposes of repair, one consumer stated, "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."²⁸

2. Static Efficiency (Concern for Competition)

Another strong justification for a right to repair is the need to maintain competition in the repair market, particularly for vehicles. The overall market for vehicle repair is large. In the United

24. For a general discussion of arguments rooted in consumer autonomy justifying a right to repair, see *id.* at 67, 81, 89.

25. *Id.* at 99.

26. See Adam Wernick, *The 'Right to Repair' Movement Wants You To Be Able to Fix Your Own Stuff*, THE WORLD: LIVING EARTH (Dec. 24, 2018), <https://www.pri.org/stories/2018-12-24/right-repair-movement-wants-you-be-able-fix-your-own-stuff> [https://perma.cc/QQ8N-Q7BB].

27. This is certainly how the U.S. Supreme Court views a straightforward sale transaction, stating in the patent context, "[a] sale transfers the right to use, sell, or import because those are the rights that come along with ownership." *Impression Prods., Inc. v. Lexmark Int'l, Inc.*, 137 S. Ct. 1523, 1534 (2017).

28. REGISTER OF COPYRIGHTS, SECTION 1201 RULEMAKING: SEVENTH TRIENNIAL PROCEEDING TO DETERMINE EXEMPTIONS TO THE PROHIBITION ON CIRCUMVENTION, INTRODUCTION AND RECOMMENDED REGULATORY LANGUAGE OF THE ACTING REGISTER OF COPYRIGHTS 3 (2018) [hereinafter SECTION 1201 RULEMAKING PROCEEDING].

States this includes manufacturers—and their dealerships—and independent entities, such as independent repair parts manufacturers and both large and small repair shops.²⁹

If manufacturers were able to steer consumers to only authorized repair entities, the independent repair market would presumably collapse. Independent repair shops would likely go out of business, not to mention the entire industry that has been built on supplying various services to these independent repair shops. Without competition in the repair market, manufacturers would be able to set prices that have no relation to the value of the services. Consumers would be forced to decide whether they could afford such repairs or need to forego using their vehicles. For some consumers, this choice could have a serious impact on their ability to earn a living, as many consumers rely on their vehicles to transport them to their places of employment or use their vehicles as part of their jobs.³⁰ Recognizing these concerns, the FTC has shown a growing interest in ensuring that deceptive practices are not creating monopolies in the repair market.³¹

3. Environmental Concerns

If personal products, including vehicles, cannot be repaired, they are thrown away and end up in landfills.³² The growing inability to repair consumer electronic products has caused some countries to pay greater attention to a right to repair because of the increase in environmental waste.³³ While cars that cannot be repaired

29. The Auto Care Association, for example, is a national trade organization that represents over 150,000 “independent businesses that manufacture, distribute, and sell motor vehicle parts, accessories, tools, equipment, materials, and supplies, and perform vehicle service and repair.” Auto Care Ass’n, Consumer Tech. Ass’n, iFixit & Owners’ Rights Initiative, *Petition to Renew a Current Exemption Under 17 U.S.C. § 1201*, U.S. COPYRIGHT OFF. (July 31, 2017), <https://cdn.loc.gov/copyright/1201/2018/petitions-073117/Renewal%20Pet.%20-%20Repair%20-%20ACA.pdf> [<https://perma.cc/T3UF-MJKD>].

30. See Adie Tomer, *America’s Commuting Choices: 5 Major Takeaways from 2016 Census Data*, BROOKINGS (Oct. 3, 2017), <https://www.brookings.edu/blog/the-avenue/2017/10/03/americans-commuting-choices-5-major-takeaways-from-2016-census-data> [<https://perma.cc/G2G2-8HZQ>] (finding that over 76 percent of Americans drive alone to work every day).

31. See FTC Workshop, *supra* note 19; see also *infra* note 125 and accompanying text.

32. See CBC News, *Broken Appliances: Why You May Need Repairs More Often*, YOUTUBE (Feb. 28, 2020), https://www.youtube.com/watch?v=Uwflbm_JrPI (interviewing Nathan Proctor).

33. For example, the European Union passed the Waste Framework Directive which mandates certain products to be designed to be repairable. Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on Waste and Repealing Certain Directives, 2008 O.J. (L 312) 3 [hereinafter Waste Framework Directive]; see also Paul A. Davies, Eun-Kyung Lee & Patrick Braasch, *The EU Adopts Four Directives to Solidify Europe’s Leading Position in Waste Management*, LATHAM & WATKINS: ENV’T, LAND & RES.

can still have their parts and materials salvaged and reused, it is estimated that up to twenty-five percent of every car will make its way into a landfill.³⁴ Landfills emit their own pollution, and globally, countries are working to reduce pollutive emissions of all types.³⁵ Environmental concerns appear to be driving the repair movement in the European Union, which has been the most aggressive in legislating for longer end-of-use lifecycles and repair parts availability.³⁶ The same rationale supports a right to repair in the United States.

4. Dynamic Efficiency (Innovation)

Lastly, dynamic efficiency considerations provide a strong justification for a right to repair. Where repair markets are open, consumers, independent repair shops, and tool developers have the ability and motivation to create new methods of repair, develop or improve diagnostic and repair tools, and create user-generated tips, manuals, and kits that could significantly benefit others.³⁷ In addition, engaging in repair requires (and thus, provides an incentive for) observation and acquisition of knowledge. One famous example of innovation born out of repair is the first operative airplane built by the Wright brothers at the beginning of the twentieth century.³⁸ The 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.³⁹ Wilbur, one of the brothers, found the solution while toying in their store with a rectangular bicycle inner-tube box.⁴⁰ Wilbur concluded that “by connecting the motion of a flying machine’s wings in relation to one another, twisting the axis of the wings in the

(July 6, 2018), <https://www.globalelr.com/2018/07/the-eu-adopts-four-directives-to-solidify-europes-leading-position-in-waste-management> [<https://perma.cc/A4CS-THFG>].

34. Ben Hewitt, *Where Your Car Goes to Die*, POPULAR MECHS. (Oct. 1, 2009), <https://www.popularmechanics.com/cars/a1481/4213384> [<https://perma.cc/6XDZ-7YCB>].

35. See, e.g., Waste Framework Directive, *supra* note 33.

36. See, e.g., Roger Harrabin, *EU Brings in ‘Right to Repair’ Rules for Appliances*, BBC NEWS (Oct. 1, 2019), <https://www.bbc.com/news/business-49884827> [<https://perma.cc/3V4V-5G8G>].

37. For examples of repair tools and manuals, see iFIXIT, <https://www.ifixit.com/> (last visited Dec. 26, 2020).

38. See Katherine White, *What If Bicycles Held the Secret to Human Flight?*, HENRY FORD, <https://www.thehenryford.org/explore/stories-of-innovation/what-if/wright-brothers> [<https://perma.cc/L3RQ-YNML>]; Brittany McCrigler, *The Wright Way: Repair Teaches Engineering*, iFIXIT (Mar. 21, 2013), <https://www.ifixit.com/News/the-wright-way-to-teach-engineering> [<https://perma.cc/SHJ6-96C3>].

39. White, *supra* note 38.

40. *Id.*

same way a box twists,” a pilot could control the aircraft.⁴¹ This led to the successful development of the first airplane and is considered a foundation of modern-day aeronautics.⁴² The modern-day automotive industry could similarly benefit from user innovation born out of repair.

B. *Historical Perspective: Legislation and Private Ordering*

The ability to perform maintenance on and repair a car relies on the ability to accurately diagnose the car’s status. While diagnostic information may not always be a precondition for diagnosing and fixing the car’s problem, at the very least it can make diagnosing the problem quicker and more efficient.⁴³ Up until recently, most diagnostic data generated by various vehicle modules could be retrieved by connecting to the OBD port, which is standardized across makes and models and for many vehicles is located under the steering wheel.⁴⁴ The standardization of on-board diagnostics began with the 1990 amendments to the Clean Air Act, which required automakers to equip vehicles with a standardized form of emissions monitoring.⁴⁵ Every vehicle, beginning with the 1996 model year, was required to have a standardized OBD port through which information on the vehicle’s emission system could be retrieved.⁴⁶ Over the years, more diagnostic and repair information besides emissions information has become available through the OBD port, and a concern arose that access to such information could be restricted by the manufacturers.⁴⁷ Against this background, several aftermarket organizations joined together with a collective goal of securing such access through legislation.⁴⁸

41. *Id.*

42. *See, e.g., id.; see also* McCrigler, *supra* note 38 (noting other “bike repair concepts” that are mirrored in the airplane built by the Wright brothers).

43. *See, e.g.,* Motor & Equip. Mfr.’s Ass’n, *Nixing the Fix—Call for Research and Data*, FTC 1, 14 (Apr. 30, 2019), <https://www.regulations.gov/document?D=FTC-2019-0013-0022> (click on “Download” under “The Motor and Equipment Manufacturers Association”) [<https://perma.cc/5JKD-U2GT>] [hereinafter MEMA Submission] (“Open and unbiased access to diagnostic information is essential for all repairers and do-it-yourself consumers.”).

44. U.S. COPYRIGHT OFF., SECTION 1201 ROUNDTABLE 56 (Apr. 25, 2018), <https://www.copyright.gov/1201/2018/hearing-transcripts/1201-Rulemaking-Public-Roundtable-04-25-2018.pdf#page=56> [<https://perma.cc/6NUM-WAFQ>].

45. EPA, ON-BOARD DIAGNOSTIC REGULATIONS AND REQUIREMENTS: QUESTIONS AND ANSWERS 2 (2003), <https://nepis.epa.gov/Exec/ZyPDF.cgi/P100LW9G.PDF?Dockey=P100LW9G.PDF> [<https://perma.cc/F3GY-FFS3>] [hereinafter EPA].

46. *Id.* at 8.

47. *See* Erica Schueller, *Who Has the Right to Repair?*, VEHICLE SERV. PROS (Feb. 12, 2018), <https://www.vehicleservicepros.com/shop-operations/data-telematics/article/20989863/who-has-the-right-to-repair> [<https://perma.cc/3383-9BG6>].

48. *Id.*

In 2012, Massachusetts became the first and only state in the United States to enact an “automotive right to repair” law that required manufacturers to provide independent repair shops access on “fair and reasonable terms” to the same types of repair information and tools that it provided to authorized dealers.⁴⁹ In 2014, following this enactment, the Association of Global Automakers entered into a MOU with organizations that represented the auto repair industry.⁵⁰ In exchange for the auto industry agreeing to make the provisions of the Massachusetts repair law the nationwide standard, the repair industry agreed to oppose and not fund new state-based legislative initiatives.⁵¹ The MOU spans all fifty states and covers a majority of automakers in the United States.⁵²

These developments were seen as a win for the auto repair industry, even though Massachusetts remains the only state to have passed car repair legislation and the MOU does not cover all car manufacturers in the United States.⁵³ This was the sentiment until recently, despite the fact that for some independent repair shops, keeping up with the latest manufacturer information even under the current regime is expensive and time-consuming. For example, where a repair shop services multiple types of vehicles, that shop needs to ensure their technicians are continuously trained on a variety of different manufacturer computer systems and also pay to access such systems.⁵⁴ A few recent developments since 2014, however, have begun to erode the effectiveness of both the Massachusetts law and the MOU—including the move towards producing “smarter” cars with telematics systems wirelessly connected to the

49. See MASS. GEN. LAWS ch. 93K (2019); Jonathan Ng, *Independent Auto Repair Shops Want Right-to-Repair Law Updated*, BOS. HERALD (June 18, 2019), <https://www.bostonherald.com/2019/06/18/independent-auto-repair-shops-want-right-to-repair-law-updated>.

50. MOU, *supra* note 9.

51. See *id.*; Gabe Nelson, *Automakers Agree to ‘Right to Repair’ Deal*, AUTO. NEWS (Jan. 25, 2014, 12:00 AM), <https://www.autonews.com/article/20140125/RETAIL05/301279936/automakers-agree-to-right-to-repair-deal> [<https://perma.cc/S6YB-H6J5>] (quoting the president of the Association of Global Automakers regarding the downside to having 50 different state laws).

52. MOU, *supra* note 9; *Our Members*, ALL. FOR AUTO. INNOVATION, <https://www.autosinnovate.org/about/our-members> [<https://perma.cc/GDH6-C3YH>].

53. See Kyle Wiens, *You Gotta Fight for Your Right to Repair Your Car*, THE ATLANTIC (Feb. 13, 2014), <https://www.theatlantic.com/technology/archive/2014/02/you-gotta-fight-for-your-right-to-repair-your-car/283791> [<https://perma.cc/CLF9-V275>] (citing that twenty-three car manufacturers were required to sign the pledge).

54. See Where We Live, *Tell Us: Should Consumers Have the ‘Right to Repair’ Their Own Devices?*, WNPR, at 24:15–30:05 (Nov. 14, 2019), <https://www.wnpr.org/post/tell-us-should-consumers-have-right-repair-their-own-devices> [<https://perma.cc/C53A-WBAM>] [hereinafter Where We Live] (interviewing independent repair mechanic).

manufacturers.⁵⁵ This development and its potential impact will be discussed in the next section.

C. *The Need for Current Efforts to Update Legislation and the MOU*

By virtue of the MOU, until recently, the majority of car diagnostic information for most vehicle models could be accessed through the car's OBD port. By plugging a scanning tool into the OBD port, mechanics could retrieve the error codes and other diagnostic information from the car, identify the problem, and clear the code from the computer's memory once the problem was fixed.⁵⁶

Nowadays, however, manufacturers are moving away from having the diagnostic information funnel into the OBD system, and instead, they are transitioning the information into separate telematics systems.⁵⁷ Passenger vehicle telematics is a growing market, with some research positing that approximately forty-seven percent of all new cars sold in North America in 2017 included some form of telematics system.⁵⁸ This number is expected to continue to increase going forward.⁵⁹

The telematics system is typically the same computer system utilized for in-car entertainment and downloads and, unlike the OBD, is not standardized across the different car manufacturers.⁶⁰ Each car manufacturer has their own type of system, as there is no requirement in the MOU or elsewhere that software be standardized.⁶¹ Relatedly, various components of the telematics system are secured by technological protection measures (TPMs) to bar unau-

55. A different development that has created an obstacle for the auto repair industry is a greater use by manufacturers of patents to protect automobile parts and accessories. See Joshua D. Sarnoff, *White Paper on Protecting the Consumer Patent Law Right of Repair and the Aftermarket for Exterior Motor Vehicle Repair Parts: The PARTS Act, S. 812, H.R. 1879, 115th Congress* 1, 13–14 (Nov. 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3082289; Grinvald & Tur-Sinai, *supra* note 20, at 112–16.

56. See U.S. COPYRIGHT OFF., *supra* note 44, at 56.

57. *Id.* at 57–58; *infra* notes 67–68 and accompanying text.

58. *The Global Automotive OEM Telematics Market 2018–2023 - Detailed Profiles of 21 Major Car OEMs and Their Telematics Propositions – ResearchAndMarkets.com*, BUS. WIRE (Sept. 5, 2018, 7:14 AM), <https://www.businesswire.com/news/home/20180905005471/en/Global-Automotive-OEM-Telematics-Market-2018-2023> [<https://perma.cc/J7VN-DV4R>].

59. See *id.*

60. See Jake Holmes & Anthony Alaniz, *Every Car Infotainment System Available in 2020*, CNET: ROADSHOW (Oct. 28, 2019), <https://www.cnet.com/roadshow/news/car-infotainment-system-automotive-tech-guide> [<https://perma.cc/CD4W-UCGF>] (highlighting the different mainstream brands' infotainment systems).

61. See Auto Care Ass'n, *Long Comment Regarding a Proposed Exemption Under 17 U.S.C. § 1201*, U.S. COPYRIGHT OFF. 1, 3, <https://cdn.loc.gov/copyright/1201/2018/comments-121817/class7/class-07-initialcomments-auto-care-association.pdf> [<https://perma.cc/9N4W-D9T3>].

thorized access to the system.⁶² These TPMs typically bar access to both copyrighted components (like the entertainment portion of the data) and uncopyrightable elements (like the car's diagnostic data).⁶³ Thus, unlike scan tool data, diagnostic telematics data is not accessible to everyone.

The MOU makes clear that the obligations of the covered car manufacturers do not apply to the data feed funneled through telematics systems.⁶⁴ It exempts from the scope of the agreement "telematics services or any other remote or information service, diagnostic or otherwise, delivered to or derived from the vehicle by mobile communications"⁶⁵ Similar language is found in the 2012 Massachusetts law, which served as a template for the MOU.⁶⁶

Currently, the OBD port can still be utilized to access some diagnostic information, but testimony from various repair proponents allege that this information is becoming more and more limited.⁶⁷ Absent access to the telematic feed, it might be difficult to assess what information manufacturers are "hiding" that could be useful for diagnostics and repair and is not otherwise available to third parties. In the near future, with expected advances in smart cars and multiple connected sensors around the car, it could very well be that information transmitted exclusively via the telematics system will be crucial to diagnosing car issues.⁶⁸ Clearly, even to the

62. Cf. *Ford Motor Co. v. Autel US Inc.*, No. 14-13760, 2015 WL 5729067, at *7-8 (E.D. Mich. Sept. 30, 2015) (where Ford argued that Autel created a program to circumvent Ford's security measures and access its data compilations without authorization, and then used this data in developing a competing diagnostics product).

63. See Auto Care Ass'n, *supra* note 61, at 6.

64. It is worth noting that the car industry believes that it is still under the obligation to provide diagnostic information and claims that it continues to do so. Missing from their statements, however, is any acknowledgement that the diagnostic information retrieved from the OBD is limited in nature. See Ma, *supra* note 1.

65. MOU, *supra* note 9, at § 2(e).

66. MASS. GEN. LAWS ch. 93K, § 2(f) (2019).

67. See SECTION 1201 RULEMAKING PROCEEDING, *supra* note 28, at 65 ("The OBD port does not provide all the same information that happens over the telematics data feed. It used to be that was where you got all the information. Increasingly, there's less and less available on those OBD ports."); *id.* at 66 (noting, in regard to Tesla, that "there's almost no information on the OBD port and instead it's all coming over the telemetry data that's encrypted"); Shira Schoenberg, *New Right to Repair Battle Rages Between Car Manufacturers and Repair Shops*, MASSLIVE (May 13, 2019), <https://www.masslive.com/news/2019/05/new-right-to-repair-battle-rages-between-car-manufacturers-and-repair-shops.html> [<https://perma.cc/R3E5-2XCF>] (noting that "[i]ndependent shops say the law does not adequately address telematics" whereas manufacturers say "the old law works just fine" because it already mandates automakers to provide all information necessary to diagnose and repair a vehicle).

68. See, e.g., MEMA Submission, *supra* note 43, at 14 (maintaining that "[o]pen and unbiased access to diagnostic information is essential for all repairers and do-it-yourself consumers"); Auto Care Ass'n, *Re: Nixing the Fix: A Workshop on Repair Restrictions*, FTC 1, 3 (May 6, 2019), <https://www.regulations.gov/document?D=FTC-2019-0013-0010> (click on "Download" under "Comment Submitted by Auto Care Association") [<https://perma.cc/792P->

extent independent repair shops could diagnose a problem without access to all available data, it would most likely take them longer and make their service less efficient and more costly for the customer. Furthermore, even if all diagnostic information included in the telematics feed were also available through the OBD port, the shift to diagnostics over-the-air grants manufacturers the advantage of getting the information in real time, whereas independent mechanics only get it if and when the car owner brings the vehicle to their shop. Altogether, then, unlike in the past where the driver could take her car to any mechanic who could plug into the OBD port to retrieve much of the diagnostic information needed for repair, independent repair shops in the near future might likely have to turn away the driver because she has a “smart car” and a wirelessly-connected telematics system. Even to the extent they are still able, in principle, to provide repair services to a “smart car,” independent repair shops would frequently be in an unfavorable position compared to an authorized dealership with access to the telematics system.

It should be noted that, aside from using proprietary diagnostic tools and software, the manufacturers are required to offer, by virtue of the Massachusetts law and the MOU, some diagnostic information that can be extracted by scanning tools and applications developed by third parties.⁶⁹ Yet, with the shift toward TPM-protected telematics systems, such third-party tools and applications are likely to be blocked from accessing any meaningful data. The lack of standardization in the telematics industry is also likely to pose difficulties for third party developers.⁷⁰ In addition, even to the extent it is technologically feasible to develop diagnostic tools that retrieve data from a telematics system, this process may involve infringement of intellectual property rights, as will be discussed below.⁷¹

All of this has created the need to update the Massachusetts law (as well as the MOU) to ensure that the switch to telematics does not curtail access to diagnostic data.⁷² Yet, the switch to telematics has also opened new ways for the manufacturers to communicate

25PX] (pointing out servicers’ need to access repair information that is increasingly available through telematic systems only).

69. For the popularity of third-party diagnostic tools, see, for example, MEMA Submission, *supra* note 43, at 14. Such a tool can typically be used to repair multiple models of vehicles.

70. For the lack of standardization in the telematics industry, see *supra* notes 60–61 and accompanying text.

71. For discussion, see *infra* Section III.B.

72. For discussion of specifics of the ballot initiative that was passed by Massachusetts voters and amends the law, see *infra* Part III.

with the consumers. As some car industry analysts see it, “[t]elematics is . . . helping OEMs [original equipment manufacturers] to strengthen their customer association to their brand by converting one-time sales into continual service-centered relationships.”⁷³ The next Part argues that this effort to capitalize on manufacturers’ relationships with their consumers poses some serious concerns for competition in the aftermarket that warrant close scrutiny and regulatory or legislative action.

II. TELEMATICS AND THE POTENTIAL FOR DECEPTIVE ADVERTISING

The use of telematics enables car manufacturers to identify and diagnose certain problems in real time, communicate with consumers regarding such problems, and guide them to fix those problems at a specified facility. Depending on the car model, this information could be delivered to consumers in various ways, including by phone, through e-mail or app messaging, through the two-way voice system installed in the car, or via the car’s media screen.

The prospect of car manufacturers delivering in-car messaging to consumers is not new. Back in 2009, reports surfaced of Mercedes-Benz testing the possibility of using the in-car telematics system to advertise products and services, including repair services, to drivers.⁷⁴ Nowadays, the recommendations and offerings to car owners can be individually tailored based on the large volume of diagnostic information transmitted from the car to the manufacturer in real time.⁷⁵ Such practices are likely to increase significant-

73. *Analysis of Embedded Telematics in the Automotive Industry - Global Forecast to 2025 Featuring OnStar, Ford, Volkswagen, Mercedes-Benz* – ResearchAndMarkets.com, BUS. WIRE (Oct. 31, 2019, 6:34 AM), <https://www.businesswire.com/news/home/20191031005444/en/Analysis-Embedded-Telematics-Automotive-Industry—Global> [<https://perma.cc/HTP4-LGXR>]. In addition, in the SWOT analysis for automakers, it is identified as an opportunity to establish direct and long-term customer relationships, and a strength is direct contact with the vehicle user. DIETMAR P. F. MÖLLER & ROLAND E. HAAS, GUIDE TO AUTOMOTIVE CONNECTIVITY AND CYBERSECURITY: TRENDS, TECHNOLOGIES, INNOVATIONS AND APPLICATIONS 5 (2019).

74. Ralph Hanson, *Mercedes to Pilot Ads in Tele Aid Telematics System*, MOTOR AUTH. (Apr. 28, 2009), https://www.motorauthority.com/news/1033006_mercedes-to-pilot-ads-in-tele-aid-telematics-system [<https://perma.cc/AH8Y-MP5D>]; *Mercedes’ OnStar Clone Tries Out Ads*, PCMag (Apr. 27, 2009), <https://www.pcmag.com/archive/mercedes-onstar-clone-tries-out-ads-239712> [<https://perma.cc/4LX2-G6ZF>] (expressing an expectation, in 2009, that “[c]ar dealers may soon have a system that lets them send advertising messages via the two-way voice and data telematics system in many new cars”).

75. See ALAN MCQUINN & DANIEL CASTRO, INFO. TECH. & INNOVATION FOUND., A POLICYMAKER’S GUIDE TO CONNECTED CARS 6 (2018), <http://www2.itif.org/2018-policymakers-guide-connected-cars.pdf> [<https://perma.cc/GM5Y-RA62>].

ly in the near future as the use of telematics becomes ubiquitous.⁷⁶ Notably, the use of tailored advertising, including offerings related to predictive maintenance and repair, is not merely a side effect of technological developments, but rather a part of a business strategy embraced by many vehicle manufacturers.⁷⁷

The increased ability to rely on remote diagnostics to detect problems as early as possible, notify the driver of such problems in real time, and encourage preventive maintenance and repair could be highly beneficial. At the same time, the practice of manufacturers communicating with car owners in real time based on exclusive diagnostic information could significantly increase manufacturers' competitive position in repair and replacement parts markets, which may come at the expense of other important values.⁷⁸

It is important to clarify upfront that this Article does not propose banning these practices altogether. Promoting one's products and services is the backbone of commercial business practice.⁷⁹ Nevertheless, in certain circumstances, the state regulates such practices—usually in order to preserve fairness in competition and protect consumers from deception and coercive marketing practices.⁸⁰ As will be detailed below, telematics-based promotion of repair and maintenance services is a context in which some level of regulation may be warranted. This Article argues that due to the “captivity” of the consumers in their cars and their unique relationship with manufacturers (that the manufacturers have worked hard to create and maintain), telematics-based advertising poses a threat to competition and consumer welfare. Policy makers should, therefore, pay close attention to manufacturers' increasing use of these

76. See, e.g., Ihor Starepravo, *From Device-Connected to Car-Connected: Unlock the Full Power of Connected Car Commerce*, DATA DRIVEN INVESTOR (July 4, 2019) (noting that in-car advertising is an important avenue for generating value for manufacturers, and that “[t]his use case is gaining traction as predictive maintenance and smart telematics becomes mainstream”).

77. See, e.g., *id.*; MCKINSEY & CO., MONETIZING CAR DATA 24 (2016), <https://www.mckinsey.com/~/media/McKinsey/Industries/Automotive%20and%20Assembly/Our%20Insights/Monetizing%20car%20data/Monetizing-car-data.ashx> [https://perma.cc/LM67-STDY] (noting such practices as part of the strategies for increasing revenue generating).

78. For discussion of such values, see *supra* Section I.A. Surely, there are other concerns associated with the use of telematics and in-car notifications, including a safety concern resulting from distraction to the driver.

79. In addition, commercial speech is a form of protected speech, although it is typically acknowledged that there is a significant governmental interest in protecting consumers such that commercial speech can be regulated. See, e.g., *Va. State Bd. of Pharmacy v. Va. Citizens Consumer Council*, 425 U.S. 748 (1976) (holding commercial speech is entitled to First Amendment protection); Alex Kozinski & Stuart Banner, *Who's Afraid of Commercial Speech?*, 76 VA. L. REV. 627 (1990) (discussing the history of the First Amendment and commercial speech).

80. See *infra* Section II.B.

new technologies to ensure that the costs imposed on society by these practices do not end up outweighing their related benefits.

A. *Manufacturers and Their Consumers:
Trust and the Captive Consumer*

In order to unpack the significant impact that telematics-based advertising could have, this Section will first examine the relationship between consumers and their car manufacturers. It will show that car manufacturers have worked to instill a sense of trust and loyalty in their consumers.⁸¹ Not only have manufacturers convinced their consumers to trust that their cars will be safe and work well, but they have utilized a variety of different mechanisms to foster a loyal relationship with their consumers. In this way, once consumers have purchased their car from one particular manufacturer, this relationship is meant to keep drawing them back—for maintenance, repairs, and eventually new cars. This Section then argues that when the consumer is in the car, the consumer is a “captive audience.” This factor could pose a serious threat to competition in the market for repair services and products when combined with the type of information being provided (typically technical information that the average consumer would not necessarily understand) and the unique relationship between the consumer and the manufacturer.

1. Trust and Loyalty in the Car Market

Car manufacturers have been working to build trust and loyalty in the American public since the late nineteenth century, with the introduction of the personal vehicle.⁸² First, car manufacturers needed to convince the public that cars were safe to drive, notwithstanding that the early vehicles could be quite dangerous.⁸³ Car

81. This type of trust is referred to as “system trust,” which “presumes the functionality and reliability of a system, and allows trust to be placed in the function of the system rather than the individual people involved in it.” Jennifer Tong, *Do You Trust Your Car? Enacting Car Safety* 18 (Spring 2016) (M.A. thesis, Lund University) <https://lup.lub.lu.se/luur/download?func=downloadFile&recordId=8894338&fileId=8894339> (citing NIKLAS LUHMANN, *TRUST AND POWER* (1979)).

82. See DAVID O. WHITTEN & BESSIE EMRICK WHITTEN, *HANDBOOK OF AMERICAN BUSINESS HISTORY: EXTRACTIVES, MANUFACTURING, AND SERVICES* 270–71 (1997) (noting that German and French companies began manufacturing personal vehicles at the commercial level in the 1880s; in 1900, there were approximately 8,000 personal vehicles in the United States, and by 1926, there were approximately 19 million).

83. See SALLY H. CLARKE, *TRUST AND POWER: CONSUMERS, THE MODERN CORPORATION, AND THE MAKING OF THE UNITED STATES AUTOMOBILE MARKET* 34 (2007).

manufacturers used a variety of different methods—from straight-forward advertising to celebrity “influencers,” motor clubs, and stunt shows—to attempt to convince the public that they should own a car.⁸⁴ Second, in order to sustain their growth and market share, car manufacturers had to cultivate their consumers’ loyalty⁸⁵ so that consumers would continue to want to return to the manufacturer with whom they have this trusting and loyal relationship.⁸⁶ Sales and financing contracts both helped to begin and sustain this relationship with consumers.⁸⁷

With the move to smart cars, which remain “tethered” to the manufacturer in many ways, the relationship between a car manufacturer and its consumer may become even stronger and involve a greater degree of dependence on the manufacturer. We use the term tethering to mean “the strategy of maintaining an ongoing connection between a consumer good and its seller that often renders that good in some way dependent on the seller for its ordinary operation.”⁸⁸ In the era of the “Internet of Things,” tethering becomes ubiquitous. Smart cars, in particular, provide their drivers multiple functions and services that are based on connectivity, starting with navigation and ending in infotainment apps.⁸⁹ At the same time, this connectivity has been strategically used by manufacturers to strengthen their direct and long-term relationships with car owners and users.⁹⁰ Telematics, in essence, converts what once may have been a “one-time sale” of a vehicle into a continual service-centered relationship between the manufacturer and its customer. This use of telematics is likely to increase the elements of trust and dependency discussed above.

The tethering effect results, to a large extent, from the growing variety of connected services that new technologies enable manufacturers to offer their customers. Yet, as with the history of the car industry and sales contracts, this effect may be further reinforced

84. *Id.* at 34, 41–43, 50.

85. *Id.* at 16 (“As Ford, GM, and Chrysler each claimed a quarter- or a third-stake in the market, their future profits depended on sustaining consumers’ repeat purchases or loyalty.”).

86. *See* Tong, *supra* note 81, at 23 (describing qualitative empirical research conducted that showed how “brand associations” were created, as consumers researched vehicle safety and continued to buy from the same brand of cars that they trusted as safe).

87. *See* CLARKE, *supra* note 83, at 3–4.

88. Christopher Hoofnagle, Aniket Kesari & Aaron Perzanowski, *The Tethered Economy*, 87 GEO. WASH. L. REV. 783, 785 (2019).

89. *See, e.g.*, Nick Statt, *Tesla Remotely Disables Autopilot on Used Model S After It Was Sold*, THE VERGE (Feb. 6, 2020, 8:03 AM), <https://www.theverge.com/2020/2/6/21127243/tesla-model-s-autopilot-disabled-remotely-used-car-update>.

90. *See, e.g.*, MCKINSEY & CO., *supra* note 77, at 23 (noting that manufacturers are using car data analytics, among other things, to improve the link between dealers and customers); *see also supra* note 73 and accompanying text.

by the use of certain contractual practices. A smart car, by definition, contains multiple software components, and those are generally protected by copyright law and merely licensed to the car owner by the manufacturer.⁹¹ Software licenses often impose various restrictions and limitations on the use of the product in which the software is embedded and thereby restrict the ability of customers to enjoy what they would otherwise be entitled to as property owners.⁹² Among other things, software licenses often limit repair and modification, ban reverse engineering, and forbid the use of competing products or services.⁹³ Such provisions clearly have a direct impact on the ability and motivation of car owners to tinker with their cars and dissuade attempts to repair them either independently or by using third party services.⁹⁴ But such contractual restrictions also work indirectly to tighten the relationship between the customer and the company in a manner that could make the latter's messages regarding maintenance and repair particularly impactful.

2. The Captive Consumer and Information Asymmetry

An additional factor to consider, on top of the unique relationship between the consumer and the manufacturer, is the location of the consumer when telematics-based messaging is delivered. With a telematics system installed in the car, manufacturers can use it (and are increasingly likely to do so) to deliver the diagnosis result and any accompanying instructions or advice to the driver in real time, via the car's two-way voice system or media screen.⁹⁵ No-

91. See Hoofnagle et al., *supra* note 88, at 798 (noting that sellers insist that copies of software are merely licensed even when software is embedded in a device purchased by the consumer); Lily Hay Newman, *Who Owns the Software in the Car You Bought?*, SLATE (May 22, 2015, 2:37 PM), <https://slate.com/technology/2015/05/gm-and-john-deere-say-they-still-own-the-software-in-cars-customers-buy.html> [<https://perma.cc/G52Y-SSKD>] (noting in the car industry context that General Motors and John Deere claim, based on their copyright on the software embedded in their vehicles, that car owners' license to operate the vehicle is subject to warranty limitations, disclaimers and all other contractual limitations).

92. See discussion *infra* Section III.C.

93. See, e.g., Hoofnagle et al., *supra* note 88, at 796; see also *infra* Section III.C.

94. Relatedly, some manufacturers attempt to limit warranty coverage in the event consumers utilize an independent repair service or attempt to do it themselves. See, e.g., Auto. Oil Change Ass'n, *Re: FTC Call for Comments Related to Nixing the Fix: A Workshop on Repair Restrictions*, FTC 1, 12 (Sept. 16, 2019), <https://www.regulations.gov/document/FTC-2019-0013-0083> (click on "Download" under "AOCA Comments to FTC Nixing the Fix") [<https://perma.cc/7QGV-VLDL>] [hereinafter AOCA Submission].

95. See, e.g., *Automotive Delivery Services Platform*, AT&T DRIVE, <https://drive.att.com/> (last visited Mar. 1, 2020) (describing the "Natural Voice Command & Control" as communicating with drivers); *OnStar Members Tell Their Stories*, ONSTAR, <https://www.onstar.com/us/en/stories> [<https://perma.cc/VV2H-7NCX>] (last visited Mar. 1, 2020) (quoting a

tably, even communications that are delivered to the consumer in the form of an email, text message, or app push notification would be read or heard by the driver in many cases while she is in the car.

This manner of communication would surely affect the way consumers process the information being delivered. It is likely the case that a consumer can weigh options more thoughtfully when she is at home in front of her computer. The use of in-car communications regarding the need for repair or maintenance may increase their impact and the sense of urgency, which could cause the consumer to take care of the matter immediately, even if it is not necessary—and, most likely, through the manufacturer’s authorized network.

Most importantly, it is unclear whether the consumer will have an effective option to turn off these notifications (or a subset of them) or mute them. Some sources note, for example, that Tesla’s consumers are only offered a binary choice right now—an all-or-nothing use of the embedded telematics system, rather than a more nuanced menu of choices.⁹⁶ Moreover, choosing to deactivate the system in its entirety may result, as specified in Tesla’s Privacy Policy, in “reduced functionality, serious damage, or inoperability, and it may also disable many features of your vehicle”⁹⁷ Under such terms, it is likely that most consumers would not opt out of the Tesla telematics service out of fear of “missing out” on important safety updates.

Given this, the constitutional “captive audience” doctrine could be applicable to the situation these consumers may face.⁹⁸ While the government generally possesses a fairly narrow authority to regulate speech, under the captive audience doctrine, a “captive” listener’s right to not be exposed to speech may trump the speaker’s right to convey speech.⁹⁹ The concerns associated with the consumer’s potential inability, when sitting in her own car, to choose not to hear the information arguably evokes the same concerns

member as stating, “I just remember hearing a voice . . . I felt like someone was there with me”).

96. See, e.g., MEMA Submission, *supra* note 43, at 15.

97. See *Legal: Privacy*, TESLA, <https://www.tesla.com/about/legal> (click on “Learn More” under “Information We May Collect”) (last visited Dec. 24, 2020).

98. See *Pub. Utils. Comm’n v. Pollak*, 343 U.S. 451, 468 (1952) (Douglas, J., dissenting) (“The streetcar audience is a captive audience. It is there as a matter of necessity, not of choice.”); Charles L. Black, Jr., *He Cannot Choose but Hear: The Plight of the Captive Auditor*, 53 COLUM. L. REV. 960, 960–61 (1953) (reviewing the Supreme Court case of *Public Utilities Commission v. Pollak*); Marcy Strauss, *Redefining the Captive Audience Doctrine*, 19 HASTINGS CON. L.Q. 85, 85–86 (1991) (citing to *Kovacs v. Cooper* as one of the early Supreme Court cases finding in favor of the captive audience, but lamenting the unclear contours of the doctrine).

99. See, e.g., Caroline Mala Corbin, *The First Amendment Right Against Compelled Listening*, 89 B.U. L. REV. 939, 943 (2009).

discussed in court cases where the “captive audience” was protected.¹⁰⁰

In addition to the *method* of communication, the *type* of information that is communicated to the consumers via the telematics system further increases the need for regulatory attention in this arena. Repair and maintenance of cars are generally conceived of as matters that affect the safety of the car. While not every repair or maintenance task recommended by a telematics system would be urgent or highly concerning (for example, an oil change), the average consumer may find it difficult to distinguish between the system’s notifications. Most of the information is technical in nature, and a large information gap exists between the average consumer and car industry professionals. The inability of the average consumer to evaluate the nature of the problem triggering the notification would naturally make the consumer more prone to act as prescribed by the recommendations without operating much discretion. A general sense of urgency and a tendency to act pursuant to the system’s recommendation could be reinforced by the “scientific” nature of the system, which relies on real time data extracted from the car.

Notably, the use of telematics to provide notifications regarding required repairs and maintenance could help consumers overcome their natural tendency to procrastinate when it comes to these types of tasks.¹⁰¹ With a telematics system notifying the driver of the need to repair her car along with information regarding where she can do this and a convenient option to book the appointment right away,¹⁰² procrastination could be significantly diminished. While this is beneficial, an unfortunate side effect could be a further increase in the impact of the communications on consumers, making it more likely that they would pursue repair and maintenance in facilities owned or linked to the manufacturer without considering the alternatives. These practices could thus result in a significant decrease of competition in markets for car repairs.¹⁰³

100. See Strauss, *supra* note 98, at 91–95 (discussing relevant cases).

101. Unlike an intentional avoidance of a task, procrastination usually involves postponing performance of a task that one does intend to pursue—resulting in undesirable delay or even non-performance. See Eyal Zamir, Daphna Lewinsohn-Zamir & Ilana Ritov, *It’s Now or Never! Using Deadlines as Nudges*, 42 L. & SOC. INQUIRY 769, 772 (2017).

102. See, e.g., MCKINSEY & CO., *supra* note 77, at 23 (noting that manufacturers enable real-time, remote booking of vehicle check-ups).

103. This effect could be intensified where repair and recalls are linked. Typically, manufacturer recalls need to be conducted by the manufacturer at an authorized repair center, and are done for free as an incentive to the consumers to have their car fixed. For example, the National Highway Traffic Safety Administration has put out “tips” to manufacturers in order to increase the rate of recall completion. Some of these tips direct manufacturers to

Moreover, when directing the consumer to repair the problem at an authorized dealership, it is likely that the system would not mention or propose any other options to the driver—certainly not concrete options in the proximity of the driver—and perhaps would even use language that implies that other options are irrelevant.¹⁰⁴ The consumer could be aware of having other options to repair her car outside the circle of the manufacturer’s authorized dealerships, yet the method and manner by which the repair information is provided to the consumer, along with the possibility for an “instant fix,” may have a powerful impact on the driver that decreases the chances that the driver would resort to other options.

Furthermore, consumers receiving telematics-based information may believe that independent repair shops would not have the requisite information about the problem even if the driver tried to use their services. Independent repair shops report they increasingly cannot access diagnostic information channeled through the telematics system.¹⁰⁵ Indeed, the telematics system embedded in a car sends diagnostics information only to the manufacturer and its authorized dealers.¹⁰⁶ To the extent consumers are aware of the possibility that independent mechanics may not have full access to such information, they may believe (rightly so) that diagnosis and repair at independent facilities would either be impossible or less efficient and more costly. Naturally, this could strengthen the tendency to pursue the manufacturer’s offer without searching for other options.

All in all, the factors identified above are likely to have a cumulative effect. The power of a manufacturer’s communications emanating from the telematics system could have an overwhelming impact on the consumer. As a result of these practices, a consumer could decide to repair her car at an authorized dealership while a rational decision may have been to fix it elsewhere at some later point. For this reason, policy makers must pay close attention to the growing use of telematics-based advertisement of repair and maintenance services in order to evaluate the need to employ cer-

utilize personalized and “branded” messaging. NAT’L HIGHWAY TRAFFIC SAFETY ASS’N, TIPS FOR INCREASING RECALL COMPLETION RATES, https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/13990-recall_best_practices-041119-v2a-tag.pdf [<https://perma.cc/ALP5-NCRP>].

104. See *infra* note 118.

105. See *Where We Live*, *supra* note 54.

106. Car manufacturers claim that they are still providing access to independent repair shops through such systems under the MOU, but this is rebutted by independent repair shops. See *id.* For a detailed discussion of the problematic aspects of the manufacturers’ control of the diagnostic information produced by cars, see *infra* Part III.

tain measures that would preserve competition in the relevant markets and protect consumers from being misled, deceived, or coerced by these practices.

B. *Looking to Consumer Protection Law for Possible Solutions*

As stated above, the new developments in diagnostics and telematics have potentially great benefits—the main one of which is enhancing safety by promoting preventive maintenance and timely repairs. Therefore, this Article does not call for the adoption of aggressive regulatory measures in this context, and certainly not an outright ban of telematics-based advertising. Due to the early stage of the telematics-based advertising industry, there is also a large measure of uncertainty as to the industry's future directions. As a result, this Article's proposals are of a tentative nature at this stage.

The body of law that seems most suitable to deal with the issues triggered by telematics-based advertising is consumer protection law.¹⁰⁷ Under 15 U.S.C. § 45(a), unfair methods of competition in or affecting commerce and unfair or deceptive acts or practices in or affecting commerce are considered unlawful, and the FTC is empowered and directed to prevent their use.¹⁰⁸ Looking first at the second prong of § 45(a), which constitutes the basis for false advertising law, the question arises: Could the practices described above be characterized as a type of deceptive advertising?

1. False Advertising

At first look, one may wonder whether communications regarding the need to maintain and repair cars are to be considered a form of advertising at all. It would be one thing if car manufacturers were merely providing information about the status of the car and pointing out the need for repairs or maintenance without trying to market their own products and services. Yet, to the extent that the communications delivered by the telematics system promote the manufacturer's business and seek to pitch its products and services to the driver, this Article contends that such commu-

107. Cf. Hoofnagle et al., *supra* note 88, at 862 (noting that consumer protection law focuses on individual harms and consumer rights but can also broadly promote functioning free markets and innovation).

108. Alongside federal law, there are state consumer protection laws, which mirror this prohibition of unfair or deceptive trade practices. See REBECCA TUSHNET & ERIC GOLDMAN, *ADVERTISING AND MARKETING LAW: CASES AND MATERIALS* 81 (4th ed. 2019).

nications should be considered advertising and evaluated as such by the responsible authorities. Classifying something as advertising may not always be straightforward,¹⁰⁹ but policy makers should employ flexibility in this regard and devote regulatory attention to new practices of attention-getting.¹¹⁰ As noted by Professor Rebecca Tushnet in a different context: “Advertising is protean where law is not. But advertising is not special that way; the problem of adapting to new variants of behavior, some shaped precisely to avoid regulation, is a typical one and need not defeat the law.”¹¹¹

Classifying telematics-based communications by manufacturers as a form of advertising, or more generally as “commercial speech,” has importance not only in bringing such speech under the purview of false advertising law but also, more generally, in determining the level of First Amendment scrutiny to which the regulation of these practices would be subject.¹¹² To the extent the practices discussed in this Article are essentially a form of advertising, any regulation of such practices could most likely pass constitutional muster more easily.¹¹³

Assuming now, for purposes of this discussion, that telematics-based notifications by car manufacturers could indeed be considered a form of advertising, a separate inquiry under false advertising law has to do with whether such notifications have a deceptive nature. Clearly, not all of them do, but some may. Generally speaking, the relevant question is how consumers perceive the advertiser’s message.¹¹⁴ This is, of course, dependent not only on the substantive content but also on the way the message is phrased and conveyed, the medium used to deliver the message, and other relevant circumstances.¹¹⁵ As the practices of different companies are not identical and are naturally subject to constant changes, this

109. *Id.* at 12.

110. See Rebecca Tushnet, *Attention Must Be Paid: Commercial Speech, User-Generated Ads, and the Challenge of Regulation*, 58 BUFF. L. REV. 721, 723, 731 (2010) (discussing the need to devote attention under false advertising law to new practices of attention-getting); Alexandra J. Roberts, *False Influencing*, 109 GEO. L.J. (forthcoming 2020) (discussing the need to regulate influencer marketing as a type of advertising).

111. Tushnet, *supra* note 110, at 791.

112. Commercial speech is more generally regulated than other types of speech and receives reduced constitutional protection. TUSHNET & GOLDMAN, *supra* note 108, at 12. While false advertising is not protected by the First Amendment at all, regulation of non-misleading commercial speech is subject to an intermediate level of First Amendment scrutiny, in contrast to the strict scrutiny framework that applies to other types of speech. See *Cent. Hudson Gas & Elec. Corp. v. Pub. Serv. Comm’n*, 447 U.S. 557 (1980); TUSHNET & GOLDMAN, *supra* note 108, at 20.

113. See also *supra* notes 98–100 and accompanying text (discussing the “captive audience” doctrine, which may serve to further justify regulation of speech in this context).

114. TUSHNET & GOLDMAN, *supra* note 108, at 9.

115. See *id.* at 6 (“[C]onsumer response to advertising varies based on the advertising medium.”).

type of determination cannot be done in a general manner. The deception could be, for instance, in regard to the level of urgency or importance of performing the repair or the need to perform it at the specified facility associated with the manufacturer.

Notably, the definition of deception in the context of false advertising law is not confined to claims that are explicitly false;¹¹⁶ omitting information can be deceptive as well.¹¹⁷ In the context discussed herein, the failure to propose, or even to mention the existence of, other options where consumers can perform a required maintenance or repair task may have a significant impact on them. This omission can undermine consumers' freedom to choose where to repair their cars, even though they typically hold general knowledge about such options. Thus, this may be considered a deceptive omission in this context.¹¹⁸

Another element of deception that may be exhibited in telematics-based communications could relate to their very nature as advertisements. As noted above, these communications may not come off at all as advertising on their face, and many consumers may simply not be aware of the fact that they are essentially receiving a promotional message. This is problematic, as consumers may regularly employ certain filters with respect to advertising but are not likely to do so when encountering a new form of advertising that is disguised as something else.¹¹⁹ For this reason, making sure that consumers are aware of their exposure to advertising is highly important.¹²⁰ In the context discussed herein, masking the promotional nature of the communications at hand can also make them appear more authoritative (like a doctor's prescription) in the eyes of the consumer and obscures the fact that the consumer may actually have leeway in choosing when and where to fix her car.

Altogether, when evaluating telematics-based advertising of repair and maintenance services, policy makers must consider the context and the unique characteristics of these practices that could

116. *Id.* at 101.

117. *Id.*

118. *Cf.* AOCA Submission, *supra* note 94, at 14 (noting, as an example for a restrictive practice, Hyundai 2017 Elantra owner's manual command form language: "Have engine oil and filter changed by an authorized Hyundai dealer . . .," which is not accompanied by an acknowledgement of the consumer's option to use any other service provider).

119. *See* Tushnet, *supra* note 110, at 730 (describing the market dynamics leading to advertisers employing "methods that don't let audiences know an ad is coming" and noting that our filters can be defeated by such new forms of advertising).

120. *See id.* at 731; Eric Goldman, *A Coasean Analysis of Marketing*, 2006 WIS. L. REV. 1151, 1189 (2006) (quoting *Fed. Trade Comm'n v. Sterling Drug, Inc.*, 317 F.2d 669, 674 (2d Cir. 1963)) (stating that consumers "routinely say that they want to know when content is marketing").

make this form of advertising extremely powerful—perhaps even close to coercive.¹²¹

2. Unfair Practices

As noted above, the FTC is not only authorized to enforce against deception but also against “unfair” trade acts.¹²² Unfairness requires that “the act or practice causes or is likely to cause substantial injury to consumers which is not reasonably avoidable by consumers themselves and not out-weighed by countervailing benefits to consumers or to competition.”¹²³ Thus, even practices that do not count as deceptive advertising need to be evaluated for their fairness. On top of the factors and circumstances highlighted above, in evaluating the manufacturers’ practices from a fairness perspective, it is essential to keep in mind other ways in which car manufacturers restrict or limit third-party repairs—for instance, by registering and enforcing design patents over replacement parts.¹²⁴ Notably, the FTC has recently started to study restrictions on repairs.¹²⁵ Due to the importance of preserving a meaningful right to repair,¹²⁶ the FTC should expand its efforts in this vein and oversee the use of telematics to ensure that it does not end up suppressing auto repairs.

3. Other Legislative Measures

Alongside the general jurisdiction of the FTC (and comparable state agencies) to regulate deceptive and unfair practices, it might be advisable to consider enacting specific consumer protection legislation to regulate certain aspects of the practices described above. The law could require, for instance, that the interface design allows consumers to easily search for other repair options. In addition, it could impose some type of a disclosure requirement regarding the promotional nature of the communications emanating

121. For the need to evaluate advertising in its context, see TUSHNET & GOLDMAN, *supra* note 108, at 143. *See also* *Avis Rent-A-Car Sys., Inc. v. Hertz Corp.*, 782 F.2d 381 (2d Cir. 1986) (noting that a court must view the entire mosaic of the advertisement rather than each tile separately).

122. *See* TUSHNET & GOLDMAN, *supra* note 108, at 53 and accompanying text.

123. 15 U.S.C. § 45(n); *see also* TUSHNET & GOLDMAN, *supra* note 108, at 53.

124. *See supra* note 55.

125. *See* FTC Workshop, *supra* note 19. As an example for repair restrictions in the automobile industry, see AOCA Submission, *supra* note 94, which details various types of repair restrictions.

126. For discussion, see *supra* Section I.A.

from the telematics system.¹²⁷ In addition, it might be sensible to require that the cost of services advertised by the system be conspicuously presented to consumers. Another dimension that the law could address is the method of communication. Policy makers should consider disallowing certain forms of in-car messaging, to the extent this can be done without compromising the functionality of the system. Additionally, a more meaningful choice should be provided to consumers regarding the type of notifications they receive and their method of delivery.¹²⁸

Unfortunately, manufacturers are not only enjoying a significant marketing advantage as a result of their control of telematics systems but are also making competition much harder by restricting access to diagnostic information. Part III discusses this in detail.

III. ACCESS FOR ALL: THE NEED TO ACCESS TELEMATICS

As discussed above in Part I, Massachusetts passed an automobile right to repair law in 2012.¹²⁹ Following this legislation, car makers and repair shops entered into a national MOU that standardized the way car diagnostic information could be accessed by all mechanics, authorized or independent.¹³⁰ Now that the MOU is in place, manufacturer diagnostic tools, including the software and diagnostic codes, must be available for purchase on “fair and reasonable terms.”¹³¹ The level of compliance with the MOU apparently varies between different car makers.¹³² In addition, transaction costs for shop owners can be high, particularly when they service more than one brand of car, requiring them to search for available information on each manufacturer’s website¹³³ and purchase a va-

127. See *supra* notes 119–20 and accompanying text; Tushnet, *supra* note 110, at 728 (noting that commercial speakers can be forced to disclose relevant information to avoid consumer deception).

128. As noted above, this is not the current situation, at least with respect to certain manufacturers. See *supra* note 97 and accompanying text.

129. MASS. GEN. LAWS ch. 93K (2019); see also Ng, *supra* note 49.

130. See A “Right to Repair” Movement Tools Up, THE ECONOMIST (Sept. 30, 2017), <https://www.economist.com/business/2017/09/30/a-right-to-repair-movement-tools-up> [https://perma.cc/H5ZS-SHYP] (“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.”).

131. MOU, *supra* note 9.

132. See Schueller, *supra* note 47 (noting that most members are “attempting to comply on some level,” but some “were reluctant to follow the MOU and chose to be selective in what software they offered”).

133. Notably, though, for vehicles manufactured in 2018 and beyond, under Section 2(c) to the MOU, *supra* note 9, OEMs must provide access to the diagnostic information by utilizing a vehicle communications interface that would act as a universal scan tool that will

riety of diagnostic tools and individual subscriptions for each manufacturer's software.¹³⁴ Yet, all in all, the industry has moved a long way towards reaching a status quo that seemed to have been mostly satisfying for all parties involved.

Now, with the spread of telematics, the concern is that this equilibrium is about to change. As noted above, in the last few years, more and more new models of cars are manufactured with a telematics system, enabling wireless transmission of data between the car and the manufacturer.¹³⁵ With a telematics system embedded in the vehicle, diagnostic data from various car modules could be gathered in a gateway and sent directly to the manufacturer, in an encrypted format, while remaining non-accessible to others.¹³⁶ Information transmitted via the telematics system cannot be easily extracted from the vehicle by third parties, not only because it is encrypted but also for lack of standardization in the hardware and software components of telematics systems.¹³⁷

And, unfortunately, the 2012 Massachusetts law and MOU do not accommodate or respond to this development and do not guarantee access to wirelessly-transmitted data.¹³⁸ The manufacturers' current obligations to provide standardized access to diagnostic information do not apply to "telematics services or any other remote or information service, diagnostic or otherwise, delivered to or derived from a motor vehicle by mobile communications."¹³⁹ There is an exception to this carve-out, obligating the manufacturers to provide access to the extent it is "necessary to diagnose and repair a customer's vehicle and not otherwise available to an independent repair facility" via the diagnostic tools offered to purchase by the manufacturer.¹⁴⁰ The term "necessary," however, could plausibly be construed narrowly by manufacturers to exclude various types of repair and diagnostic information. In addition, absent access to the telematic feed, it could be difficult to discern what information manufacturers fail to provide access to, and as a result, detecting and proving a breach of the manufacturers' obligations

extract repair diagnostic codes from any make or model, and thus eliminate the need for the purchase of OEM diagnostics scanning tools.

134. And hence, the need for universal scanning tools that can be used for diagnosis of vehicles made by different manufacturers. This was the nature of the tool developed by Autel, which triggered the litigation discussed *infra* notes 178–88 and accompanying text.

135. See, e.g., Glenn Wilder, Opinion, *Your View: Right to Repair Needs Update*, PATRIOT LEDGER (June 6, 2019), <https://www.patriotledger.com/opinion/20190606/your-view-right-to-repair-needs-update> [<https://perma.cc/T92U-D76K>] (expecting that by 2020, "more than 90 percent of new cars will transmit real-time repair information wirelessly").

136. See, e.g., MEMA Submission, *supra* note 43, at 14.

137. See *supra* notes 60–61 and accompanying text.

138. Section 2(e) of the R2R Agreement attached to the MOU, *supra* note 9.

139. *Id.*

140. *Id.*

could be challenging. Some independent mechanics report their struggle to access diagnostic information they once had access to is triggering serious and wide-spread concern that the switch to telematics is making the MOU and the 2012 Massachusetts law obsolete.¹⁴¹

Utilizing new technological developments to avoid the spirit of the law and the governing private ordering regime should not be permitted. In order to deal with this emerging reality, states need to update automobile repair legislation and mandate that car manufacturers supply standardized access to telematics and software on reasonable terms. In addition, as the discussion below will explore, lawmakers should consider certain changes to intellectual property laws so that manufacturers cannot use them as another means to bar access to their telematics systems and diagnostic data.

Enabling reasonable access to diagnostics would not only allow independent repair shops to operate but could also lessen the anti-competitive impact resulting from the manufacturers' control of the telematics system for marketing purposes.¹⁴² Currently, drivers may simply rule out the possibility of taking their cars to independent repair shops, knowing that such shops do not have access to diagnostics. Enabling third parties to access diagnostics may cause drivers to consider other options more often, even in the face of aggressive marketing on behalf of the original manufacturers.

A. *Updating Automobile Repair Legislation*

Considering all the above, this Article supports the new amendments that update Massachusetts's 2012 right to repair law to better address the growing use of telematics in vehicle diagnostics and repair.¹⁴³ Given that Massachusetts voters approved such legislation

141. See *Where We Live*, *supra* note 54 (interviewing independent mechanic); *Baystate Business: Police Reform*, BLOOMBERG, at 18:42 (June 11, 2020), <https://www.bloomberg.com/news/audio/2020-06-11/baystate-business-police-reform-radio>; *supra* notes 67–68 and accompanying text.

142. See discussion *supra* Part II.

143. Massachusetts voters approved a ballot initiative in November 2020 to amend the 2012 law. Brandon Bigelow & Dallin Wilson, *Mass. Voters Expand Right to Repair Law: Is Past Prologue or Will OEMs Be Forced to Fight Back?*, JD SUPRA (Nov. 12, 2020), <https://www.jdsupra.com/legalnews/mass-voters-expand-right-to-repair-law-33686> [https://perma.cc/SKG5-547N]. The ballot initiative is almost identical to a 2019 bill: An Act to Enhance, Update and Protect the 2013 Motor Vehicle Right to Repair Law and Consumer Rights, H. 340, 191st Gen Ct. (Mass. 2019). Because the state legislature did not pass the bill by the end of the term, *Bill H.340*, MALEGISLATURE.GOV, <https://malegislature.gov/Bills/191/H340> (last visited Dec. 26, 2020), proponents of the update instead managed to put the law on the November ballot for Massachusetts voters to vote on during the 2020

in November 2020, other states may follow suit, or an amended MOU with the car industry could emerge.¹⁴⁴

The core provision of the amendments would eliminate the telematics carve-out described above¹⁴⁵ and require a manufacturer of vehicles that utilizes a telematics system, starting with model year 2022 and thereafter, to equip such vehicles with an “inter-operable, standardized and open access platform across all of the manufacturer’s makes and models.”¹⁴⁶ The amendments clarify that “[s]uch platform shall be capable of securely communicating all mechanical data emanating directly from the motor vehicle via direct data connection to the platform.”¹⁴⁷ This secure platform “shall be directly accessible by the owner of the vehicle through a mobile-based application.”¹⁴⁸ An “owner” of a vehicle is defined, in the original Massachusetts act, as a person or business who owns or leases the vehicle.¹⁴⁹ Most importantly, an owner would also have a right to authorize an independent repair facility to access the vehicle’s mechanical data for the purposes of maintaining, diagnosing, or repairing the vehicle.¹⁵⁰ To avoid any doubt, the amendments also clarify that “[a]ccess shall include the ability to send commands to in-vehicle components if needed for purposes of maintenance, diagnostics and repair.”¹⁵¹

Having these amendments adopted by the Massachusetts voters goes a long way towards maintaining the ability of independent repair shops to access diagnostic data in Massachusetts. While this Article supports this direction, it does not opine on whether the

elections. See CTR. FOR STATE POL’Y ANALYSIS, A GUIDE TO MASSACHUSETTS QUESTION 1: EXPANDING THE RIGHT TO REPAIR LAW 3 (Oct. 2020), https://tischcollege.tufts.edu/sites/default/files/cSPA_right_to_repair.pdf [<https://perma.cc/A96Y-8TC4>]. Given that the bill and the ballot initiative are almost the same, this section will not differentiate between the two and uses the term “law” to reference both the bill and the initiative. Although the initiative was passed by Massachusetts voters in the November 2020 election, the legislature could still take action to amend the new law. See *id.* at 5; Bigelow & Wilson, *supra*.

144. *But see* Bigelow & Wilson, *supra* note 143 (expressing doubts as to the likelihood of striking a nation-wide deal by the time the amendments are set to become effective).

145. See *supra* note 139 and accompanying text.

146. H.340 § 3. The proposed bill and the ballot initiative have slightly different definitions of what a telematics system constitutes. The following is the definition of a “telematics system” as provided for in the ballot initiative: “any system in a motor vehicle that collects information generated by the operation of the vehicle and transmits such information, in this chapter referred to as ‘telematics system data,’ utilizing wireless communications to a remote receiving point where it is stored.” SEC’Y. OF THE COMMONWEALTH, MASSACHUSETTS INFORMATION FOR VOTERS: 2020 BALLOT QUESTIONS 5 (2020), https://www.sec.state.ma.us/ele/elepdf/IFV_2020.pdf [<https://perma.cc/A8JS-j24Z>].

147. *Id.* “Mechanical Data” is defined in section 1 as “any telematics data in a vehicle related to the diagnosis, repair or maintenance of that vehicle.”

148. H.340 § 3.

149. MASS. GEN. LAWS ch. 93K, § 1 (2019).

150. H.340 § 3.

151. *Id.*

law's specific solution—a secure platform and a mobile-based application—is necessarily the best way to address the concern regarding hindered access to diagnostic information. It might very well be, but this Article does not rule out the possibility that there may be other good technological solutions to alleviate this concern. In addition, some aspects not yet addressed by the amendments perhaps should be considered, including the possibility of allowing third parties to market their repair and maintenance services via the platform to the same extent authorized dealers are permitted to do so.

While one of the goals of the new law is to spur similar amendments to the nationwide MOU, if, for some reason, this does not happen, a more modest alternative should be considered. For instance, even if they do not get real-time access to telematics diagnostic information, consumers and independent mechanics should nonetheless be permitted to connect to the telematics system after the fact. In order to reduce costs, this connection should preferably be done through a standard non-proprietary interface that connects to a vehicle's telematics gateway. While this would not eliminate the competitive advantage of the manufacturers resulting from their exclusive access to real-time information, such a solution would at least enable independent mechanics to extract all relevant data if and when the vehicle arrives at their shop. Similarly, an amended MOU could clarify and explicitly require that all telematics information useful for diagnosis and repair be made available through the OBD port.¹⁵²

B. *Intellectual Property Law Considerations*

Critically, in order to effectively promote competitive access to diagnostic and repair information, it may not be sufficient to enact state consumer protection laws, as certain intellectual property implications must be considered as well.¹⁵³ This Section addresses such potential implications in connection with two different branches of intellectual property law: copyright law and trademark law.

152. See *supra* note 67 and accompanying text.

153. For a thorough treatment of the interface between intellectual property law and the right to repair consumer products, see Grinvald & Tur-Sinai, *supra* note 20, at 90–123.

1. Copyright Law

Markedly, software components of a telematics-based system for diagnostics are likely to be subject to copyright protection.¹⁵⁴ In addition to the software, various data compilations contained in the system could be protected, provided that the “selection, coordination, and arrangement” of the data meet the originality requirement of copyright law.¹⁵⁵ Hence, in requiring access to the telematics system and data, the new Massachusetts law might implicate federal copyright law. Notably, when a state law attempts to circumvent or interfere with the underlying goals of a federal law, preemption concerns may arise.¹⁵⁶

Likely more concerning, however, is that manufacturers can utilize copyright law, along with contractual restrictions, to effectively bar access to components of their systems.¹⁵⁷ To the extent there is a gap between diagnostic and repair data available to manufacturers and those available to consumers and independent repair shops, independent mechanics can only continue operating by independently retrieving data from vehicles using third party diagnostic tools.¹⁵⁸ Yet, any unauthorized copying or adaptation of copyrighted software or other components by independent shops or tools developers may trigger copyright liability.¹⁵⁹

154. It is possible that patents may also protect similar items.

155. *Feist Publ'ns v. Rural Telephone Serv. Co.*, 499 U.S. 340, 359 (1991); *see also* *Auto Care Ass'n*, *supra* note 61 (arguing that “data collected through telematics systems is creatively arranged to support innovative telematics systems”). Notably, the underlying data are not protected by copyright and may be freely copied. *Feist Publ'ns*, 499 U.S. at 360. As to ownership of data, *see also* discussion *infra* Section IV.B.

156. Under the preemption doctrine, in case of a conflict between a state law and a federal one, the federal law controls and the state law must be struck down as preempted. *See, e.g.*, Camilla A. Hrdy, *The Reemergence of State Anti-Patent-Laws*, 89 U. COLO. L. REV. 133, 158 (2018) (“‘Preemption’ generally describes a situation in which federal law ‘preempts,’ or supersedes, a state or local law.”); Dmitry Karshedt, *Contracting for a Return to the USPTO: Inter Partes Reexaminations as the Exclusive Outlet for Licensee Challenges to Patent Validity*, 51 IDEA 309, 317 (2011) (noting that under the preemption doctrine, in case of a conflict between federal and state law, the federal law controls and the state law is invalidated). Preemption analysis is typically conducted under the Supremacy Clause of Article VI of the Constitution, which provides that the laws of the United States “shall be the Supreme Law of the Land . . . any Thing in the Constitution or Laws of any state to the Contrary notwithstanding.” U.S. CONST. art. VI, cl. 2. Notably, the 2012 Massachusetts Right to Repair Act already implicated federal copyright law in a similar manner (to the extent it obligates manufacturers to make available copyrighted software), and we are not aware of any constitutional challenges that have been raised in this respect.

157. *See* discussion *infra* Section III.C.

158. The availability of third-party tools could also be highly beneficial for independent shops even if proprietary diagnostic tools capable of extracting all necessary data are offered for purchase by manufacturers, as such tools can typically operate across multiple platforms, and thus save the need to purchase separate tools and software subscriptions. *See supra* note 69 and accompanying text.

159. This issue has come up in the *Ford v. Autel* litigation discussed *infra* notes 178–88 and accompanying text.

Although copyright law recognizes an exemption for the copying or adaptation of software that is created as an essential step in connection with its use, this exemption does not seem to include the scenarios discussed in this Article.¹⁶⁰ Furthermore, this exemption is restricted to copies made or authorized by the *owner* of a copy of a computer program, and vehicle owners are not likely the owners of the software copies embedded in their cars.¹⁶¹ In fact, makers of devices that rely on embedded software code for their functionality, including cars, often preserve ownership in copies of the software, while device owners are considered mere licensees.¹⁶² This position has been adopted, for instance, by John Deere and General Motors with respect to their vehicles.¹⁶³ Similarly, in a comment to the Copyright Office, the Auto Alliance recently maintained that many telematics systems are subject to license agreements that “clearly show the user does not own the copyrighted software.”¹⁶⁴ Courts have backed up this position by upholding license agreements specifying that a software user does not own the copy but is merely a licensee.¹⁶⁵ Thus, it seems that consumers, repair shops, and independent tool makers who copy elements of proprietary diagnostic software, even in the course of repair, are not covered by the Copyright Act’s software exemptions. It is also not clear whether § 107 of the Copyright Act (the “fair use” provision) would be applicable in these cases;¹⁶⁶ and due to the inherent uncertainty involved in fair use determination, it certainly cannot be relied upon by any of the parties we are concerned with.¹⁶⁷

160. 17 U.S.C. § 117(a)(1). Another provision in the Copyright Act includes a specific repair exemption that allows the owner of a machine to make copies of software in the course of maintaining or repairing the machine. *See id.* § 117(c). It is unlikely that a consumer or independent mechanic would be copying the car’s software in the course of repairing the car. A more likely scenario for copying of diagnostic software would be a third party attempting to develop diagnostic tools, and such attempts would not fall within this exemption.

161. *See* Hoofnagle et al., *supra* note 88, at 798 (noting that rights under Section 117 of the Copyright Act are limited to owners of copies of software).

162. *Id.*

163. *Id.*; Newman, *supra* note 91.

164. Auto Care Ass’n, *supra* note 61, at 11.

165. *See, e.g.*, Vernor v. Autodesk, Inc., 621 F.3d 1102, 1111–12 (9th Cir. 2010) (holding that a software user is a licensee rather than an owner of a software program where the copyright owner specifies that the user is granted a license and imposes significant transfer and use restrictions).

166. Section 107 of the Copyright Act has a four factor test that judges are required to consider and balance. One of the factors is the impact on the market of the copyrighted work, here, the software. 17 U.S.C. § 107. Given that there would be an adverse (but pro-competitive) impact on the market, this would not necessarily be deemed to be fair use.

167. *See, e.g.*, Barton Beebe, *An Empirical Study of U.S. Copyright Fair Use Opinions, 1978–2005*, 156 U. PA. L. REV. 549, 575 (2008) (reporting that 30.4% of preliminary injunctions found in favor of fair use and 24.1% of bench trial opinions did).

In light of the above, there is a need for action at the federal level to provide a “safe harbor” from liability (or, at the very least, a compulsory license regime) for certain uses of copyrighted works needed to enable vehicle diagnostics and repair, to the extent manufacturers do not provide reasonable access to such works. While such a regime would limit the possibility of enforcing copyright against independent repairers and diagnostic tool makers, manufacturers would still be able to assert their copyright in components of the telematics system against other car manufacturers incorporating such components in their own systems. In any event, market exclusivity may not be needed at all to incentivize manufacturers to invest in diagnostic and telematic systems, which allow them to offer better services to their customers.

Another area of copyright law that needs to be revised to support a competitive diagnostics and repair market is § 1201 of the Copyright Act, which sets the legal basis on which manufacturers are able to control access to their telematics systems through the use of TPMs.¹⁶⁸ Even if disabling such locks is technologically feasible, § 1201 prevents anyone from disabling a TPM that a copyright owner has placed on a work in order to protect its copyrighted works.¹⁶⁹ On top of civil liability, if the disabling of a TPM is done willfully and for commercial gain, the circumventer may be criminally liable.¹⁷⁰

Fortunately, § 1201 authorizes the Librarian of Congress, upon the recommendation of the Copyright Office, to adopt temporary exemptions (valid for three years) to these strict prohibitions in certain circumstances.¹⁷¹ As part of the latest exemptions announced in 2018, following a thorough rulemaking proceeding,¹⁷² the Librarian of Congress renewed and expanded an exemption that allows persons who engage in non-infringing uses of software contained in, and controlling the function of, a lawfully acquired motorized land vehicle, to circumvent TPMs for purposes of diagnosis, repair, or modification of a vehicle function.¹⁷³ As part of the renewed exemption, the Librarian of Congress removed a limitation prohibiting circumvention of TPMs to access computer pro-

168. See *supra* note 62 and accompanying text; Auto Care Ass’n, *supra* note 61 (discussing the burden posed by the current access to TPMs on independent servicers).

169. 17 U.S.C. § 1201.

170. *Id.* § 1204.

171. *Id.* § 1201.

172. See *Section 1201 Exemptions to Prohibition Against Circumvention of Technological Measures Protecting Copyrighted Works*, U.S. COPYRIGHT OFF. (2018), <https://www.copyright.gov/1201/2018> [<https://perma.cc/HK8F-3EKU>].

173. Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 83 Fed. Reg. 54,010, 54,014 (Oct. 26, 2018) (to be codified at 37 C.F.R. pt. 201).

grams primarily designed for the control of telematics systems. Thus, disabling TPMs to gain access to diagnostic data from the telematics module of the car is now permitted for purposes of repair of the car. However, a proposal to expand the exemption so that it also permits diagnosis, repair, or lawful modification of the telematics system itself was rejected. This means that tweaking the telematics system so that it transmits diagnostic information to a mechanic chosen by the vehicle owner is not permitted under this exemption.

Although consumers can now legally bypass TPMs on their telematics systems by virtue of the renewed exemption, this does not mean that third party mechanics or diagnostic tool makers could do so as well. While a requirement that circumvention be “undertaken by the authorized owner” of the vehicle was removed as part of the renewed exemption,¹⁷⁴ the Copyright Office declined to explicitly extend the exemption to third parties. In fact, disablement of TPMs by independent mechanics and diagnostic tool makers may implicate § 1201(a)(2) and § 1201(b) of the Copyright Act (the “DMCA anti-trafficking provisions”), which prohibit the manufacturing or trafficking of circumvention tools and the provision of circumvention services. Only Congress is authorized to provide exemptions in this respect. Thus, in its recommendation leading to the enactment of the § 1201 exemptions, 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.”¹⁷⁵ This is unfortunate in terms of enabling a meaningful right to repair. Indeed, the Copyright Office acknowledged the argument made by repair proponents that many consumers would not be able to take advantage of the exemption if they were not able to utilize third-party assistance.¹⁷⁶

Therefore, while the 2018 exemption was a win for the repair industry, it was a muted win and leaves open room for additional regulatory intervention. The temporary nature of the exemption is yet another downside, and the Copyright Office could be persuaded in future years not to renew it.¹⁷⁷ Our analysis supports the con-

174. *Id.* at 54,022.

175. SECTION 1201 RULEMAKING PROCEEDING, *supra* note 28, at 225.

176. *Id.*

177. This concern is not theoretical. On past occasions, the Copyright Office has decided not to renew much needed exemptions, including the “unlocking” exemption that had been provided from 2006 to 2012 to allow consumers to connect their wireless devices to an alternative network. *See* Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 77 Fed. Reg. 65,260, 65,264–66 (Oct. 26, 2012) (describing the history and subsequent narrowing of the unlocking exemption). It took an act of Congress to overturn the denial of the exemption. *See* Unlocking Consumer

tinuing renewal of the exemption, though ultimately, we call for a permanent and more encompassing enactment of such an exemption by Congress.

2. Trademark Law

Another area where intellectual property rights could create obstacles to competition in the market for diagnostic tools has to do with trademark law. One recent case highlights this issue: Ford Motors sued Autel, an independent manufacturer of diagnostic scanners. One of Ford's allegations claimed Autel infringed upon its trademarks by including them on the electronic menu screen of its diagnostic tool along with other logos. Ford argued that this use causes a likelihood of confusion as to the source of Autel's diagnostic tool.¹⁷⁸ In addition, Ford pleaded dilution through blurring and tarnishment, due to the associations that Autel's customers could make through its diagnostic tool because the use of the Ford logo arguably linked Ford and Autel.¹⁷⁹

While courts have developed the doctrine of "nominative fair use" in trademark law,¹⁸⁰ and "descriptive fair use" is a statutory defense to trademark infringement,¹⁸¹ the court did not dismiss the pleadings.¹⁸² These defenses ordinarily allow third parties to utilize others' trademarks to the extent necessary to communicate information to consumers regarding their businesses.¹⁸³ Under these doctrines, courts have held that using original manufacturers' word marks in similar contexts—including by repair shops and parts resellers—is noninfringing.¹⁸⁴ Where a use is made of the original manufacturer's logo (or "stylized" mark), however, as in Autel's case, courts more readily find trademark infringement.¹⁸⁵ Unfortunately, this was likely the message Autel received because

Choice and Wireless Competition Act, Pub. L. No. 113-144, 128 Stat. 1751 (2014) (codified as amended at 17 U.S.C. § 1201 note (2012 & Supp. V 2018)).

178. *Ford Motor Co. v. Autel US Inc.*, No. 14-13760, 2015 WL 5729067, at *7-8 (E.D. Mich. Sept. 30, 2015).

179. *Ford Motor Co. v. Autel US Inc.*, No. 14-13760, 2016 WL 3569541, at *5 (E.D. Mich. July 1, 2016).

180. See Alexandra J. Roberts, *Trademark Failure to Function*, 104 IOWA L. REV. 1977, 1997 (2019) (describing the nominative fair use defense).

181. 15 U.S.C. § 1115.

182. *Ford Motor Co.*, 2015 WL 5729067, at *9 (noting that the use of Ford's logo was a factor leading it to not apply precedential cases and grant Autel's motion to dismiss).

183. See *Toyota Motor Sales v. Tabari*, 610 F.3d 1171, 1176-77 (9th Cir. 2010) (holding that Toyota is not entitled to a wholesale injunction against a broker of genuine Lexus cars).

184. See *id.*

185. See *Hypertherm, Inc. v. Precision Prods., Inc.*, 832 F.2d 697, 701 (1st Cir. 1987) (upholding an injunction in part on the defendant's use of plaintiff's trade dress).

Autel eventually settled the case with Ford.¹⁸⁶ Ultimately, based on Autel's website, it appears that the settlement allowed Autel to continue to use Ford's name but not its logo.¹⁸⁷

Although Autel's business may not have suffered greatly from this multi-year litigation, when manufacturers enforce their trademarks against independent repair shops, which are likely to be small businesses or sole proprietorships, the problem can be exacerbated. While Autel had the wherewithal to likely negotiate for the ability to use the plain text word "Ford" to indicate its products were compatible with Ford cars (and which nominative fair use clearly covers), independent repair shops may not know this or have access to lawyers who can advise them of this. Therefore, when they receive cease-and-desist letters claiming that the independent repair shop cannot refer to the manufacturer at all (not even in plain text), the repair shop owner will likely cede to the demands in order to not get caught up in a costly and emotional legal battle.¹⁸⁸

There is serious need for clarity regarding the scope of trademark rights and the consequences of unfounded claims of infringement. Some relief might come in the form of a state law providing a cause of action to address "abusive threats" made by manufacturers.¹⁸⁹ In addition, in today's image-heavy world, more thought needs to be given to judges' predispositions toward allowing the use of plain text and not of trademark logos.¹⁹⁰ It is questionable whether the use of the plain text allows third parties to compete as well as other licensed entities who are entitled to use the logos.¹⁹¹

C. Regulating Contractual Practices

Contract law provides one area where state legislatures and courts could be forward-thinking. Given that almost all software

186. Stipulated Motion to Dismiss, *Ford Motor Co. v. Autel US Inc*, No. 4:14cv13760-TGB-MJH (E.D. Mich. Mar. 16, 2017), 2017 WL 4391922.

187. See Database of Coverage of Autel's Scanners, <http://www.maxitpms.com/getCoverage.aspx> (select "US" from the "Market" dropdown) (showing Ford as one of the models under Make and Model); *Product Display of MaxiSys*, AUTEL ONLINE STORE, https://www.autelonline.com/autel-ms908cv-maxisys-cv-heavy-duty-diagnostic-scan-tool-with-j-2534-ecu-coding-programming_p76.html [<https://perma.cc/XEF4-JWLC>] (showing the names of the car companies, not the logos).

188. See generally Leah Chan Grinvald, *Policing the Cease-and-Desist Letter*, 49 U.S.F. L. REV. 409, 414-18 (2015) (discussing the cease-and-desist process).

189. See *id.*

190. See, e.g., *Hypertherm*, 832 F.2d at 701 (upholding an injunction in part on the defendant's use of plaintiff's trade dress).

191. Due to space limitations, this question is left for another day.

systems are licensed to consumers, there is typically an End User License Agreement (EULA) attached to it. By using the software (for example, by purchasing or leasing the vehicle, and then driving the car), a consumer is agreeing to abide by the terms of the EULA, which often contain use restrictions on how the consumer should use the software. For example, farm equipment sold by John Deere is accompanied by a license agreement that prevents consumers from accessing the software embedded in the equipment and prohibits any repairs other than those made by authorized repair providers.¹⁹²

Ford's lawsuit against Autel also illustrates how manufacturers have utilized these EULAs to protect their systems.¹⁹³ In addition to the trademark infringement and other intellectual property claims, Ford argued that Autel purchased Ford's proprietary diagnostic scanner and used it in violation of the EULA, which prohibited reverse engineering while also providing that an "End-User" cannot be a "diagnostic toolmaker."¹⁹⁴ Notably, copying or making an adaptation of a copyrighted software program while exceeding the terms of a software license does not only involve a breach of contract but could also constitute copyright infringement.¹⁹⁵

Contract law, though, is state-based and also subject to judicial interpretation. This means that states can curb certain uses of contract they deem to be anti-competitive through measures limiting what manufacturers can include in their EULAs. In addition, in light of the strong policy considerations favoring access to diagnostic information, perhaps courts should consider viewing such restrictions as constituting "unclean hands," or a form of copyright misuse.¹⁹⁶ Finally, certain contractual restrictions that seek to inhibit competition in markets for diagnostic tools and repairs could run afoul of federal antitrust law as agreements in unlawful re-

192. See Jason Bloomberg, *John Deere's Digital Transformation Runs Afoul of Right-to-Repair Movement*, FORBES (Apr. 30, 2017), <https://www.forbes.com/sites/jasonbloomberg/2017/04/30/john-deeres-digital-transformation-runs-afoul-of-right-to-repair-movement> [https://perma.cc/4WSD-8K68].

193. See *supra* notes 178–88 and accompanying discussion.

194. *Ford Motor Co. v. Autel US Inc.*, No. 14-13760, 2016 WL 3569541, at *2 (E.D. Mich. July 1, 2016); see also *GM LLC v. Dorman Prods.*, 2016 U.S. Dist. LEXIS 135721 (E.D. Mich. Sept. 30, 2016) (for an argument that copying of software constituted a violation of the governing EULA).

195. See 17 U.S.C. §§ 106(1)–(2) (providing to the copyright owner the exclusive right to copy and prepare derivative works from their copyrighted work).

196. For the copyright misuse doctrine, see, for example, Brett Frischman & Dan Moylan, *The Evolving Common Law Doctrine of Copyright Misuse: A Unified Theory and Its Application to Software*, 15 BERKELEY TECH. L.J. 865 (2000); and Chip Patterson, *Copyright Misuse and Modified Copyleft: New Solutions to the Challenges of Internet Standardization*, 98 MICH. L. REV. 1351 (2000).

straint of trade.¹⁹⁷ As we have noted, the FTC has begun an investigation into the car repair industry, and hopefully their investigation will bring solutions to advance competition in this arena.¹⁹⁸

IV. CHALLENGES AND RESPONSES

We recognize the repair movement is controversial. The efforts for and against the original Massachusetts repair act were wide-ranging, and the efforts to pass a revised version (or fight against such passage), have been no different.¹⁹⁹ In this Part, we attempt to proactively address some of the arguments that could be used to argue against an expanded right to repair law that would encompass data transmitted via telematics systems.

A. *Everything Is a Trade Secret*

One of the oft-cited challenges to a right to repair for cars, or even more broadly, electronics, is that manufacturers would be forced to disclose trade secrets if legislatures mandated they provide access to repair information.²⁰⁰ A trade secret is generally defined as information that: (1) its owner has taken reasonable steps to keep secret, and (2) derives an actual or potential independent economic value from being a secret.²⁰¹ To accommodate this con-

197. See Sherman Antitrust Act, 15 U.S.C. § 1 (2012) (“Every contract . . . in restraint of trade or commerce . . . is declared to be illegal.”). Some commentators have opined that state antitrust law needs to “parallel” federal law, meaning that what is illegal under federal antitrust law can be illegal as well under state law. See Richard A. Samp, *The Role of State Antitrust Law in the Aftermath of Actavis*, 15 MINN. J.L. SCI. & TECH. 149, 149–50 (2014). For a history of the relationship between state and federal antitrust law, see generally Herbert Hovenkamp, *State Antitrust in the Federal Scheme*, 58 IND. L.J. 375 (1983).

198. As noted above, the FTC has authority to investigate and pursue actions against entities engaging in unfair competitive practices, as well as those that harm consumers. See *supra* note 108 and accompanying text.

199. Right to Repair collected over 100,000 signatures in order to be on the ballot for Massachusetts voters to vote on in 2020. See Press Release, The Massachusetts Right to Repair Coalition, Needed Update of MA Right to Repair Law Headed to Ballot (Dec. 5, 2019), <https://www.prnewswire.com/news-releases/needed-update-of-ma-right-to-repair-law-headed-to-ballot-300969819.html>. The ballot initiative was hotly contested in the lead up to the November 3, 2020 vote. See Callum Borchers, *Mass. Voters Say ‘Yes’ on Question 1, Expanding Access to Car Repair Data*, WBUR NEWS (Nov. 3, 2020), <https://www.wbur.org/news/2020/11/03/ballot-question-1-right-to-repair-passes> [<https://perma.cc/85NP-NCP7>] (citing the amount of money raised for and against Question 1, as well as the misleading advertising opponents ran in attempt to convince voters to vote “no”).

200. See, e.g., Letter from Rick Habben, Safety Compliance Eng’r, Wahl Clipper Corp., to David Harris, Rep., Ill. Gen. Assembly (Apr. 17, 2018), <https://www.documentcloud.org/documents/4446374-Wahl-Opposition-Illinois.html> [<https://perma.cc/8TCZ-SYHK>].

201. See, e.g., UNIF. TRADE SECRETS ACT § 1(4) (amended 1985), 14 U.L.A. 538 (2005); 18 U.S.C. § 1839(3).

cern, the original Massachusetts act and, correspondingly, the MOU state that “[n]othing in this chapter shall be construed to require a manufacturer to divulge a trade secret.”²⁰² No provision in the new amendments qualifies this exception. Hence, broad claims could be made that most or all information related to or embedded in the telematics system is a trade secret, in which case the manufacturers are under no legal obligation to provide access to such information.²⁰³ This exception could thus diminish the effectiveness of the new amendments.

This Article’s response to this argument is two-fold. First, to be classified as a “trade secret,” the information must meet the applicable statutory requirements, including that the owner has taken reasonable measures to keep the information secret.²⁰⁴ We have previously posited that a plausible argument could be made that when information is readily shared with authorized dealers (and their repair personnel) all over the country, the owner has not taken such reasonable measures.²⁰⁵ Among other things, even where manufacturers have entered into confidentiality agreements with their authorized dealers, it is unclear whether the repair personnel of these authorized dealers have, in turn, entered into similar agreements with their employers. Unfortunately, this examination of how a trade secret is kept a secret would likely only be undertaken in a legal proceeding.²⁰⁶ As we have noted previously, independent repair shops may not have the means to initiate litigation to challenge how manufacturers are keeping their trade secrets confidential.²⁰⁷

And, current case law is not necessarily on the side of repair. In fact, federal case law from the Eighth Circuit holds that “[r]easonable efforts to maintain secrecy need not be overly extravagant, and absolute secrecy is not required.”²⁰⁸ In this particular case, Rolls Royce had entered into confidentiality agreements with

202. MASS. GEN. LAWS ch. 93K, § 3 (2019). “Trade Secret” is defined in a broad manner in section 1.

203. For the likelihood of such an argument brought by car manufacturers, see Matt Murphy, *Bill Filed to Prevent Skirting Right-to-Repair Law*, METRO W. DAILY NEWS (Sept. 18, 2018), <https://www.metrowestdailynews.com/news/20180918/bill-filed-to-prevent-skirting-right-to-repair-law> [<https://perma.cc/GN9W-LBQ8>] (noting that in the negotiations for the original Massachusetts law, the “trade secret” status of telematics systems was actually the reason behind automakers insisting on exempting telematics from the scope of the law).

204. See UNIF. TRADE SECRETS ACT § 1 (1985).

205. Grinvald & Tur-Sinai, *supra* note 20, at 123.

206. *Id.* (“Unfortunately, repair shops that do not have information supplied to them due to the manufacturers’ assertion of a trade secret exemption may not have the means to initiate litigation challenging this assertion.”).

207. *Id.*

208. *AvidAir Helicopter Supply, Inc. v. Rolls-Royce Corp.*, 663 F.3d 966, 974 (8th Cir. 2011).

its authorized repair centers and shared repair documents that contained a legend indicating confidential information.²⁰⁹ The court held that these were reasonable efforts to maintain what Rolls Royce claimed to be trade secrets, notwithstanding that the alleged trade secrets were accessed through other channels.²¹⁰ Similarly, in the *Ford v. Autel* litigation discussed above, the district court refused to dismiss Ford's trade secret claim on the pleadings, ruling that by disclosing that it only shares its trade secrets with authorized dealers, Ford sufficiently alleged it took reasonable efforts to maintain their secrecy.²¹¹

Given that "reasonable efforts" are subject to judicial interpretation, we would urge judges to look beyond superficial attempts at confidentiality to the reality of the efforts. This means judges should not only look at the confidentiality agreements that the manufacturers have in place with their authorized networks, but also look at how, if at all, manufacturers monitor and enforce these agreements to ensure their trade secrets remain a secret. This is similar to what judges do where allegations of "naked licensing" are made in trademark litigation.²¹² Where a trademark is licensed, the owner has an obligation to monitor the ongoing quality of the products which are being sold under their trademark.²¹³ While judges look for quality control clauses in licensing agreements, they also look at evidence surrounding what steps the licensors took to monitor and enforce the agreements.²¹⁴

The second prong of this Article's response to the potential that manufacturers would assert an overly broad trade secrecy claim is to preempt the problem by either deleting the current provision in the vehicle repair act that exempts trade secrets altogether²¹⁵ or replacing it with a more nuanced provision that includes an appropriate carve-out for diagnostic information. The Repair Association

209. *Id.*

210. *Id.*

211. *Ford Motor Co. v. Autel US Inc.*, No. 14-13760, 2015 WL 5729067, at *7-9 (E.D. Mich. Sept. 30, 2015).

212. *See, e.g., Yellowbook Inc. v. Brandeberry*, 708 F.3d 837, 846 (6th Cir. 2013) ("Under trademark law, where a licensor does not exercise reasonable quality control over a licensee, the mark is deemed abandoned due to the 'naked licensing.'").

213. *See, e.g., Tumblebus Inc. v. Cranmer*, 399 F.3d 754, 764 (6th Cir. 2005) (stating that naked licensing occurs when a trademark owner fails to maintain quality control over a licensee's use of the mark such that "the mark can no longer provide 'a meaningful assurance of quality.'").

214. *See, e.g., Hokto Kinoko Co. v. Concord Farms, Inc.*, 738 F.3d 1085, 1098 (9th Cir. 2013) ("[T]he licensor may establish adequate quality control by demonstrating a close working relationship between the licensor and the licensee.").

215. *Cf. An Act to Amend Section 1793.03 of the Civil Code, Relating to Consumer Warranties*, Assemb. B. 1163, 2019-2020 Leg., Reg. Sess. (Cal. 2019) (proposing not to include a trade secrets exception in a California right to repair bill in regard to consumer electronics).

recently proposed model legislation that included a similar provision in the context of consumer electronics.²¹⁶ Section 5(a) to the model legislation provides: “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 to provide documentation, parts, and tools on fair and reasonable terms.”²¹⁷ The Massachusetts repair act could similarly treat information related to diagnostics, maintenance, or repair as information that cannot be protected as trade secrets and, therefore, is subject to the provisions of the act mandating access. Arguably, if Massachusetts or any other state were to adopt this language, the law could be perceived as modifying trade secret law. Yet, given that trade secret law is both state and federal, states should not shy away from regulating what should (or should not), in fact, be a trade secret.²¹⁸

B. *Ownership of Data Claims*

Another challenge to the right to repair could be that mandating manufacturers to provide access to telematic data conflicts with their ownership of such data.

This argument does not have a solid legal basis. While data are subject to a complex set of regulations, including privacy and security regulations, they are largely free from property rights.²¹⁹ Under U.S. copyright law, for instance, while the original “selection, coordination, and arrangement” of data could be the subject of copyright protection, the underlying data are never protected by copyright and may be freely copied.²²⁰ Similarly, whereas personal

216. For discussion, see Grinvald & Tur-Sinai, *supra* note 20, at 120–22.

217. *Model State Right-to-Repair Law*, REPAIR ASS’N § 5(a) (July 24, 2018), <https://repair.org/s/Right-to-repair-Model-state-law-7-24-18.docx> [<https://perma.cc/MTK5-LYKD>].

218. Until recently, trade secret protection relied solely on state law. Sharon K. Sandeen & Christopher B. Seaman, *Toward a Federal Jurisprudence of Trade Secret Law*, 32 BERKELEY TECH. L.J. 829, 833 (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 U.S. . . .”). In 2016, Congress enacted the Defend Trade Secrets Act, Pub. L. No. 114–153, 130 Stat. 376 (2016) (codified as amended in scattered sections of 18, 28, and 34 U.S.C.), but the legislation does not preempt or displace state law. 18 U.S.C. § 1838 (Supp. 2018). This means that state-based definitions of a trade secret (either through legislation or through judicial interpretation) can continue to coexist with a federal definition. Sandeen & Seaman, *supra*, at 905 (noting that on its face, the federal definition appears to be narrower in how it defines “information”).

219. See, e.g., Lothar Determann, *No One Owns Data*, 70 HASTINGS L.J. 1, 5 (2018).

220. *Feist Publ’ns v. Rural Telephone Serv. Co.*, 499 U.S. 340, 359 (1991).

property laws could protect physical manifestations of information (like traffic signs), they do not protect the information itself.²²¹

Most importantly, even if data were subject to property rights, in the case of diagnostics data created by a vehicle, it would make much more sense to allocate such rights to the vehicle owner rather than to the manufacturer of the vehicle. The vehicle creates the data in the course of its use by the owner. There would be no data if the owner did not use the vehicle. The fact that this data is transmitted to the manufacturer in real time, just because the latter designed the car to do so, should not create an ownership attachment between the manufacturer and such data.

Finally, even if it were true that manufacturers owned diagnostics data transmitted via telematics systems, it would not mean that legislation could not mandate them to provide others with access to such data. Property rights are often subject to various legal exceptions and limitations predicated on the need to enable access to other parties. Consider, for instance, copyright's fair use doctrine or the concept of real property easements.²²² As demonstrated by this Article's analysis, there is clearly a need to ensure vehicle owners and independent mechanics can access diagnostic information.²²³

C. Safety Concerns with Open and Connected Software

As part of their objection to the call for greater access to telematics, manufacturers could also raise safety and security concerns. Safety concerns are not unique to the telematics scenario. Arguments based on safety and quality of repair have been raised before in the context of the right to repair cars,²²⁴ as well as other consumer products.²²⁵ There is nothing exclusive to the telematics scenario that increases the safety risks associated with car repairs.

Generally speaking, in a competitive repair market, consumers could switch to alternative repair services, including ones offered by the original manufacturer or its authorized agents, in case their

221. See Determann, *supra* note 219, at 13. While this is not the focus of this paper, we should note, in brief, that we generally find this current legal regime justified from a policy perspective.

222. For copyright's fair use doctrine, see 17 U.S.C. § 107. For a definition of an easement, see *Marvin M. Brandt Revocable Tr. v. United States*, 572 U.S. 93 (2014) ("An easement is a nonpossessory right to enter and use land in the possession of another and obligates the possessor not to interfere with the uses authorized by the easement.").

223. See *infra* Section I.C & Part III.

224. See, e.g., Newman, *supra* note 91 (presenting the argument that enabling access to car code could result in making cars dangerous to drive).

225. See Grinvald & Tur-Sinai, *supra* note 20, at 122–23.

independent repair shop does not provide a high-quality service. Absent any concrete market failures, the invisible hand of the market can presumably be trusted in this context. Most importantly, the more the original manufacturers support repair businesses rather than fighting them, the better the quality of repairs is likely to be. Providing reasonable access to available diagnostic and repair information (as well as diagnostic tools, training, etc.) is a crucial component in mitigating any safety concerns associated with third party repairs.

The only unique challenge associated with telematics-based diagnostics seems to be the need to ensure data is transmitted wirelessly in a safe way.²²⁶ Yet, this challenge arises out of the actual switch from OBD ports to telematics-based diagnostics, a step taken by the manufacturers themselves. There is clearly a need to continually enhance security measures employed in connection with transmission of data from and to cars.²²⁷ Yet this does not contradict enabling secured access to some portions of the car's data for certain sets of approved users—in this case, access to diagnostic data for third party repairers authorized by the vehicle owner.

D. Looking into the Future: Remote Repairs

One of the more interesting challenges to a right to repair cars will come from the future of repairs: wireless and remote repairs. Instead of sending notices to their users to bring their cars into an authorized dealer for a software repair,²²⁸ manufacturers will simply “push” the repair to the cars without the need for users to do anything.²²⁹ Tesla has been the pioneer on this front with “over-the-air” software repairs.²³⁰ In fact, with autonomous vehicles just on the horizon, remote repairs will likely become a necessity. “After all, if you don't want to be bothered driving the car, you're not likely to want to waste time taking it in to the dealership for a fix, either.”²³¹

226. See, e.g., MCQUINN & CASTRO, *supra* note 75, at 17–20 (discussing the various privacy concerns).

227. See generally Kessler, *supra* note 2.

228. See John R. Quain, *With Benefits – and Risks – Software Updates Are Coming to the Car*, DIGITAL TRENDS (Oct. 29, 2018), <https://www.digitaltrends.com/cars/over-the-air-software-updates-cars-pros-cons> [<https://perma.cc/DD3W-LBB9>] (“According to NHTSA, today only 62 percent of recalled cars ever get repaired—even after owners have been sent multiple notices. OTA could eliminate many of these compliance problems, and save millions of dollars in maintenance work in the process.”).

229. See Alex Brisbourne, *Tesla's Over-the-Air Fix: Best Example Yet of the Internet of Things?*, WIRED (Feb. 2014), <https://www.wired.com/insights/2014/02/teslas-air-fix-best-example-yet-internet-things> [<https://perma.cc/L6V9-FVNP>].

230. See generally *id.*

231. See Quain, *supra* note 228.

The question will be whether manufacturers are successful in maintaining a monopoly over these remote repairs in all situations. The challenge that will likely be raised to allowing independent repair shops access to push remote repairs will be similar to other arguments discussed in this Part. Yet the competitive need to allow an open market for car repairs—either in a physical shop or remotely—does not change as technology updates. In addition, if the experience with Tesla is any indication, there will hopefully be consumer backlash over attempts to monopolize all repairs.²³²

CONCLUSION

The discussion in this Article demonstrates how the law can, and should, be adapted to keep pace with technological developments. Currently, there is a risk that newly enhanced technological abilities could enable manufacturers to evade their legal duties and suppress competition in the market for repair services. In just a few years since the passage of the 2012 Massachusetts law and the 2014 MOU, car manufacturers have utilized legal ambiguity around telematics to skirt their obligations in a manner that severely threatens competition in the market for car repairs. There are good reasons to believe that this situation is only going to get worse in the near future. To maintain the spirit of the law and secure consumer choice with respect to car repair, adaptations must take place.

Altogether, we believe a multi-pronged and multi-agency approach is needed to provide for an effective right to repair cars, as well as other consumer products. We support the new Massachusetts law that requires car manufacturers to provide third parties with reasonable access to diagnostic and repair information transmitted via telematics systems. Hopefully, now that the new law has passed in Massachusetts, the MOU will also be updated to include similar provisions.

Moreover, due to the potential for deceptive advertising and the ability of manufacturers to take advantage of their relationships with consumers, this area should be closely examined and possibly regulated. Manufacturers' control over telematics systems for purposes of advertising their services and products threatens consumer choice and competition in repair markets. We hope the FTC's

232. See Mike Moffitt, *The Thing About Owning a Tesla No One Talks About—Nightmarish Repair Delays*, SF GATE (May 28, 2019, 11:30 AM), <https://www.sfgate.com/cars/article/tesla-repair-wait-time-complaints-electric-car-13796037.php> [<https://perma.cc/ZQ5P-RKFV>].

ongoing investigation into the repair industry will produce concrete actions in this respect.

Finally, we should not be concerned simply with consumer protection laws and policies but also federal intellectual property laws. As the discussion in this Article shows, without due attention paid to intellectual property laws, an effective right to repair cannot be implemented.

