



Automobile Finance Law in the Emerging Autonomous and Mobility Ecosystem

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Automobile Finance Law in the Emerging Autonomous and Mobility Ecosystem

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I. Introduction

Mark Twain once said, “During the gold rush it’s a good time to be in the pick and shovel business.” The automobile industry is seeing a technological “gold rush”—especially in California—as companies large and small mine the latest science tech and data to sustain a mobility ecosystem based on autonomous vehicles and their component technologies.

Engineers and coders blew the gates open. Auto manufacturers, marketers and start-ups followed in the “picks-and-shovels” enterprises that followed the mobility boom, exploiting autonomous technologies in the race to hit pay dirt. Financiers, of course, joined the rush, too, as they began to predict how autonomous vehicles and their related technologies would affect the financial services industry they support.¹

Less predictable are the legal implications of financing in the new mobility ecosystem. While lawyers have mostly evaluated the low-hanging fruit of insurance, privacy, and tort law, the legal issues facing the automobile financial services industry with regard to autonomous technology and the mobile ecosystem largely has been ignored.

This article attempts to fill that gap. It examines recent developments in origination of vehicle sale and lease contracts, including evolving ownership models, contract methods like “E-Sign” and “Smart Contracts,” and consumer credit risk analysis; servicing of auto finance contracts, including fair debt collection and credit reporting issues; and realization of collateral, including data

¹ See Sven Beiker, Fredrik Hansson, Anders Suneson, & Michael Uhl, “*How the convergence of automotive and tech will create a new ecosystem*,” McKinsey&Company, (November 2016) (“As the high-tech and automotive worlds merge—with four disruptive technology trends driving change—a complex ecosystem is creating new rules for success”), <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/how-the-convergence-of-automotive-and-tech-will-create-a-new-ecosystem>; Steve McLaughlin, *et al.*, *AutoFinTech: The Emerging FinTech Ecosystem Surrounding the Auto Industry*, FT Partners (December 2017) (“The emergence of the transportation sharing economy (through on-demand transportation, car sharing, and ride sharing) has created a vibrant ecosystem of alternative transportation and mobility options. The proliferation of these providers has raised questions over the necessity of traditional car ownership, as consumers potentially adopt on-demand car/ride sharing platforms as a primary mode of transportation.”), <https://www.ftpartners.com/docs/FTPartnersResearch-AutoFinTech.pdf>; Krueger & Johnston, *Financing the Future of Mobility: Auto Finance in the Evolving Transportation Ecosystem*, at 6 (Deloitte Touche 2016) (“[T]he financing products already or will soon exist to address the dramatic changes we anticipate in the future of mobility. What is required to execute each one of those steps and to create those products will likely deviate significantly from the capabilities of many of today’s auto finance players. Companies will need to: determine which segment or segments of the future mobility ecosystem they will seek to serve; evaluate their current operations, practices, and functional capabilities; and determine what new skills and resources they will need to compete successfully.”), <https://www2.deloitte.com/content/dam/Deloitte/mx/Documents/manufacturing/Financing-Future-of-mobility.pdf>.

collection and vehicle repossession by modern means. The upshot is simple - until the law catches up with technological advances, the law is, in the mobility ecosystem, the same as it ever was.

II. Background

One does not have to look far to see the future: Uber's fleet of driverless cars cruise around Arizona,² while the "Google Car" drives itself autonomously around Silicon Valley.³ Audi's RS7 piloted driving concept car hits 140 mph—driverless.⁴ Mercedes-Benz's DISTRONIC PLUS® advanced radar sensors adapt a sedan's speed to the flow of traffic.⁵

Not ten years ago, forward thinkers dreamt up ways to let you "commandeer your car from across the country."⁶ Today, you can summon a car with an app on your phone (*see, e.g.*, Uber; Lyft). Tomorrow, could you drive one with it? Could you fill up your tank or make your monthly payment without leaving your seat? Pay at the drive-through window without opening your wallet? File an insurance claim? Check your driving history? Even renew your lease or buy a new vehicle from the comfort of your ergonomic, sport-aligned, climate-controlled, Bose®-infused cockpit? ... Maybe, if not probably.

Consider all of the players needed to make such dreams reality: the consumer, consumer reporting agencies, the finance company, the automobile dealer, the manufacturer, and the DMV. All of those entities will (and must) be working together symbiotically in the new mobility "ecosystem."⁷

The law is integral here, too. As autonomous vehicles ("AV") and truly self-driving cars are emerging from the primordial ooze of autonomous technology ("AT")⁸, regulators and legislators are laying down the rules of the road. For

² <https://www.wired.com/2017/03/uber-redeploys-self-driving-cars-wreck-arizona/>.

³ <https://www.youtube.com/watch?v=5UBdrMTxsvs>.

⁴ <https://www.youtube.com/watch?v=Ol3g7i64RAI>.

⁵ <https://www.mbusa.com/mercedes/owners/videos/videoId-6f31735fd7cee310VgnVCM1000007c184335RCRD>.

⁶ <https://www.popsci.com/cars/article/2010-02/remote-control-cars>.

⁷ *See* Sven Beiker, Fredrik Hansson, Anders Suneson, & Michael Uhl, "How the convergence of automotive and tech will create a new ecosystem," McKinsey&Company, (November 2016) ("As the high-tech and automotive worlds merge—with four disruptive technology trends driving change—a complex ecosystem is creating new rules for success."), <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/how-the-convergence-of-automotive-and-tech-will-create-a-new-ecosystem>.

⁸ Much has been written about these technological distinctions, the mechanics of which are beyond the scope of this article. For a useful primer, *see*: S.W., *Why Autonomous and Self-driving Cars are Not the Same*, THE ECONOMIST

example, in a rare moment of regulatory foresight, the State of California enacted a pilot regulatory program in 2014 for AVs.⁹ Senator Ed Markey of Massachusetts introduced legislation in 2015 (reintroduced earlier this year) called the “Security and Privacy in Your Car Act” (or “SPY Car Act”) with the stated purpose of “protecting consumers from security and privacy threats to their motor vehicles.”¹⁰ Most legal commentators thereafter focused on similar initiatives, with particular attention paid to technology, mechanics, risk allocation¹¹ and data privacy.¹²

Commentators offer some predications on the impact of autonomous technology and the mobility infrastructure on the traditional brick-and-mortar dealers, on the banking industries, and on insurance companies. As these commentators have observed, traditional automobile indirect financing should not die an immediate death.¹³ Correlating changes in ownership and financial or FinTech products, however, promise revolutionary changes for automobile finance companies.¹⁴

(July 2nd, 2015) (“Autonomous cars will look like the vehicles we drive today, according to carmakers, with forward facing seats and a steering wheel. These cars will take over from the driver under certain circumstances... In the near future autonomous vehicles might take over driving completely in heavy traffic or on motorways. Self-driving cars are a stage further on. The steering wheel will disappear completely and the vehicle will do all the driving using the same system of sensors, radar and GPS mapping that autonomous vehicles employ.”), <https://www.economist.com/blogs/economist-explains/2015/07/economist-explains>. See also Scott Hyman, *Hasta La Vista, Baby: The Challenges To Lenders In Financing Autonomous Vehicles*, CONSUMER FINANCE REPORT (Fall 2005) (“In a rare moment of regulatory foresight, the State of California enacted a pilot regulatory program in 2014 for autonomous vehicles. Cal. Veh. Code § 38750(c). Distinguishing between ‘autonomous vehicles’ (‘AVs’) and ‘autonomous technology’ (‘AT’), the pilot program recognizes that a vehicle can have autonomous technology but still not be an AV. According to the California regulatory scheme, a vehicle is an AV if the technology is ‘capable, collectively or singularly, of driving the vehicle without the active control or monitoring of a human operator.’ Cal. Veh. Code § 38750(a)(2)(B); See also NHTSA, Preliminary Statement Concerning Automated Vehicles at 4-5 (laying out a five-part continuum for deciding AV status).”), <http://thebluechairstudio.com/severson-newsletter/hasta-la-vista-baby-the-challenges-to-lenders-in-financing-autonomous-vehicles/>.

⁹ Cal. Veh. Code § 38750(c).

¹⁰ <https://www.markey.senate.gov/imo/media/doc/2017-03-20-SPYCAR-Act-BillText-.pdf>.

¹¹ E.g., article: *Legal Issues Raised by the Driverless Vehicle Revolution – PART 2* (discussion of the potential impact of the driverless vehicle revolution on products liability law and data security), <https://www.quinnemanuel.com/the-firm/news-events/article-january-2016-legal-issues-raised-by-the-driverless-vehicle-revolution-part-2/>.

¹² Aroma Sharma, *Driving the Future: The Legal Implications of Autonomous Vehicles*, SANTA CLARA L. REV. (2012) (“In January 2012, the Santa Clara Law Review hosted its annual symposium on the topic of “Driving the Future: The Legal Implications of Autonomous Vehicles.” The High Tech Law Institute co-sponsored the symposium. The symposium was one of the first major academic events to explore the legal issues raised by autonomous vehicles symposium received.”), <http://law.scu.edu/hightech/autonomousvehicleconffrecap2012/>.

¹³ Krueger & Johnston, *Financing the Future of Mobility: Auto Finance in the Evolving Transportation Ecosystem*, at 6 (Deloitte Touche 2016), <https://www2.deloitte.com/content/dam/Deloitte/mx/Documents/manufacturing/Financing-Future-of-mobility.pdf>.

¹⁴ *Id.*

As manufacturers work diligently to make AVs and AT part of the larger mobility ecosystem,¹⁵ companies involved at all stages of the auto financing process (*i.e.*, origination, servicing, and asset disposition) must keep up the technological pace. But, a finance company will have to properly manage its risk¹⁶ in order to offer adequate “ecosystem services”¹⁷—that is, the benefits consumers and the public-at-large will receive from a well-functioning autonomous mobility ecosystem¹⁸—as well as to remain viable and profitable.¹⁹ Or, in the words of one commentator, automobile companies must evolve to become and remain a valuable part of a consumer’s “digital wallet.”²⁰

Automobile finance companies must, of course, also remain legally compliant. Few commentators have addressed legal concerns of the companies at the forefront of financing the new tech.²¹ This makes sense because the regulatory,

¹⁵ Intel (INTC) Consortium to Build Autonomous Car Ecosystem, ZACKS EQUITY RESEARCH (August 15, 2017), <https://www.zacks.com/stock/news/271926/intel-intc-consortium-to-build-autonomous-car-ecosystem>.

¹⁶ Jeff Zurschmeide, *How autonomous vehicles will forever change how we buy, own, and insure cars*, DIGITAL TRENDS, (March 17, 2017) (“But the shock waves of this disruptive technology will shake the world in more ways than one, and the technical work moving forward at automakers today has the potential to overturn the economic basis of the entire automotive industry completely.”), <https://www.digitaltrends.com/cars/autonomy-will-change-the-way-you-purchase-and-finance-cars/>. See also White Clarke Group, *Auto Captives Summit Evaluates Auto Finance in New Digital Ecosystem*, (Nov. 18, 2016) (“Given this background, consumers and fleet managers are not looking for point solutions, but are demanding access to a platform which serves all their needs and which provides, in Gleeson’s words, ‘one digital life.’”), <http://www.autofinancenews.net/auto-captives-summit-evaluates-auto-finance-in-the-new-digital-ecosystem-sponsored/>.

¹⁷ https://en.wikipedia.org/wiki/Ecosystem_services.

¹⁸ Brian Patrick Eha, *Four ways the connected car will change banking*, AMERICANBANKER, (January 29, 2017) (“While much of the technology to make such payments a reality exists, “it’s not just about the technology,” said Richard Meszaros, the connected-commerce lead at Accenture. “It’s about the ecosystem that needs to be part of this user experience. The car may have the technology, but if the car can’t talk to the fuel pump it doesn’t matter. There is a network effect [that has to happen] here. ... What’s more, the arrival of fully autonomous vehicles may actually prop up private car ownership — at least to some extent — because it would mean that ‘owning an automobile has finally become a good investment opportunity rather than a bad one,’ Annamalai said. Banks could provide loans to buy self-driving cars, which could then be used for ride-sharing services — earning money for their owners when the owners weren’t using them.”), <https://www.americanbanker.com/news/four-ways-the-connected-car-will-change-banking>.

¹⁹ Henrik Naujoks, Florian Mueller, Darci Darnell and Harshveer Singh, *Ecosystems: How Insurers Can Reinvent Customer Relationships*, BAIN & CO., (Sept. 14, 2017) (“Around the world, across the four product groups (auto, home, health and life), insurance customers who use ecosystem services and have a positive experience give their carriers high loyalty scores—significantly higher than customers who use no ecosystem services at all.”), <http://www.bain.com/publications/articles/ecosystems-how-insurers-can-reinvent-customer-relationships.aspx>.

²⁰ Emma Sandler, *Future of Mobility, Part IV: Where Fintech and the Cloud Come In*, MOBILITY FINANCE, (June 23, 2017) (“expanding role of fintech in auto finance, the use of the cloud and block-chain, and the push for the car as a digital wallet”), <http://mobilityfinance.net/future-of-mobility-part-iv-where-fintech-and-the-cloud-come-in/>.

²¹ Excepting the lead Author, of course. See Scott Hyman, *Hasta La Vista, Baby: The Challenges To Lenders In Financing Autonomous Vehicles*, CONSUMER FINANCE REPORT (Fall 2005), <http://thebluechairstudio.com/severson-newsletter/hasta-la-vista-baby-the-challenges-to-lenders-in-financing-autonomous-vehicles/>.

manufacturing, legal, and financial infrastructure necessary to sustain a nationwide fleet of autonomous consumer vehicles does not yet exist. The law also famously trails behind technological developments.

For now, at least, the “value chain” of origination, servicing, and asset disposition (not to mention consumer marketing and insurance underwriting), along with associated capabilities, still govern auto finance and auto finance law.²² Thus, while the next generation of legal practitioners in the mobility ecosystem must certainly keep abreast of technological developments and keep pace with their own clients’ and constituents’ respective needs, they must try to do so within existing legal principles. The problem is that many of these may seem archaic when applied to current technologies until the law adapts to support the capabilities needed to sustain this evolution.

III. Origination

A. Contracting

1. Consumer Use

This article focuses primarily on *consumer* automobile finance law. However, the line between “consumer” use of a vehicle (that triggers a panoply of consumer protection laws) and commercial use is becoming more blurred with the emergence of the modern automobile economy—to say nothing of the autonomous vehicle ecosystem in particular. For example, even consumer use AVs can be put to commercial use nowadays, and the “primarily for consumer use” requirement of consumer protection laws may be difficult—if not impossible—to identify in some applications.

The distinction generally turns on whether a retail installment sales contract (or lease) was entered into “primarily for personal, family, or household purposes.”²³ This distinction triggers a host of consumer protection laws governing the quality of the goods, disclosures with respect to the lending terms, and restrictions on the

²² Krueger & Johnston, *Financing the Future of Mobility: Auto Finance in the Evolving Transportation Ecosystem*, at 6 (Deloitte Touche 2016) (“[T]he financing products already or will soon exist to address the dramatic changes we anticipate in the future of mobility. What is required to execute each one of those steps and to create those products will likely deviate significantly from the capabilities of many of today’s auto finance players. Companies will need to: determine which segment or segments of the future mobility ecosystem they will *Seek* to serve; evaluate their current operations, practices, and functional capabilities; and determine what new skills and resources they will need to compete successfully.”), <https://www2.deloitte.com/content/dam/Deloitte/mx/Documents/manufacturing/Financing-Future-of-mobility.pdf>.

²³ *E.g.*, Cal. Civ. Code § 2981(k); 2985.7(d).

way a loan is serviced, particularly with regard to debt and data collection and credit reporting activities.

Ride-sharing services such as Uber and Lyft provide noteworthy examples of the evolving concepts of car “use,” which muddy the waters of the “personal” versus “commercial” conundrum,²⁴ or at least demonstrate their fluidity.²⁵ A truly “consumer” AV might be used commercially during the time when the consumer works, while sleeping, or while the consumer otherwise is not using it.²⁶ In a rare bit of foresight, some states have responded by obligating Transportation Network Companies (“TNC”) like Uber and Lyft to inform their drivers to disclose their employment with the TNCs to lienholders in order to isolate any impact this may

²⁴ Steve McLaughlin, *et al.*, *AutoFinTech: The Emerging FinTech Ecosystem Surrounding the Auto Industry*, FT PARTNERS (December 2017) (“Ownership may increasingly shift away from personal ownership to car-sharing fleets owned by mobility companies, impacting auto dealers and lenders who currently operate on a consumer-centric model.”), <https://www.ftpartners.com/docs/FTPartnersResearch-AutoFinTech.pdf>; Krueger & Johnston, *Financing the Future of Mobility: Auto Finance in the Evolving Transportation Ecosystem*, at 1 (Deloitte Touche 2016) (“Customers will increasingly be businesses in addition to individual consumers, and overall loan volume—and its associated revenue—could decline dramatically in the long run.”), <https://www2.deloitte.com/content/dam/Deloitte/mx/Documents/manufacturing/Financing-Future-of-mobility.pdf>.

²⁵ Greg Ulankiewicz, *The Road Ahead for Auto Lending*, THE RADDON REPORT (July 27, 2017) (“So then, what is the probability that auto loans shift from a consumer product to a commercial one, lending to companies that manage fleets of autonomous vehicles that shepherd around people who don’t want the expense of owning a car, or possibly even *See* the need to learn how to drive in the first place?”), <https://www.raddon.com/raddon-report/road-ahead-auto-lending/>; Steve McLaughlin, *et al.*, *AutoFinTech: The Emerging FinTech Ecosystem Surrounding the Auto Industry*, FT PARTNERS (December 2017) (“The emergence of the transportation sharing economy (through on-demand transportation, car sharing, and ride sharing) has created a vibrant ecosystem of alternative transportation and mobility options. The proliferation of these providers has raised questions over the necessity of traditional car ownership, as consumers potentially adopt on-demand car/ride sharing platforms as a primary mode of transportation.”), <https://www.ftpartners.com/docs/FTPartnersResearch-AutoFinTech.pdf>. *See also* Emma Sandler, *Future of Mobility, Part II: Rise of AVs Means Decline in Loan Volumes*, MOBILITY FINANCE, (June 20, 2017) (“But, more importantly, with the rise of shared mobility, the demand for consumer credit for vehicles will decline, giving way to commercial credit”), <http://mobilityfinance.net/future-of-mobility-part-ii-rise-of-avs-means-decline-in-loan-volumes/>. *But see* Michael Bartlett, *Modernizing Auto Lending for Credit Unions*, CREDIT UNION JOURNAL, (June 07, 2017) (“despite all the headlines about autonomous vehicles, Uber, Lyft and the sharing economy, and millennials not buying cars, NADA expects the auto buying model to be the same 10 years from now as today”), <https://www.cujournal.com/news/modernizing-auto-lending-for-credit-unions>.

²⁶ Brian Patrick Eha, *Four ways the connected car will change banking*, AMERICANBANKER, (January 29, 2017) (“While much of the technology to make such payments a reality exists, “it’s not just about the technology,” said Richard Meszaros, the connected-commerce lead at Accenture. “It’s about the ecosystem that needs to be part of this user experience. The car may have the technology, but if the car can’t talk to the fuel pump it doesn’t matter. There is a network effect [that has to happen] here. ... What’s more, the arrival of fully autonomous vehicles may actually prop up private car ownership — at least to some extent — because it would mean that ‘owning an automobile has finally become a good investment opportunity rather than a bad one,’ Annamalai said. Banks could provide loans to buy self-driving cars, which could then be used for ride-sharing services — earning money for their owners when the owners weren’t using them.”), <https://www.americanbanker.com/news/four-ways-the-connected-car-will-change-banking>.

have on their borrowers' existing contracts.²⁷ These laws, however, are aimed only at regulating TNCs' disclosures to their drivers, and there is no guarantee that those drivers will convey pertinent employment information to their lenders. Only one state imposes a civil penalty of \$250 if it is later determined the driver did not disclose their employment with TNC to his or her lender.²⁸

2. Contract Models

Ownership and finance models are merging. Automakers and finance companies are experimenting with different, sometimes communal, ownership models²⁹ as well as hybrid ownership/lease-based subscription-services.³⁰ These unique ownership³¹ models often fall in areas unregulated by existing consumer protection laws.³² Financial services companies either will have to bootstrap these

²⁷ Those states currently include: Colorado (*See* Colorado Revised Statutes Title 40, Utilities § 40-10.1-605(1)(j)(i)), Georgia (*see* Georgia Code Title 33, Insurance § 33-1-24(h)(2)), Iowa (*see* Iowa Code 2017, § 321N.3(d)(1)), Nebraska (*see* NE Code § 75-332(1)(c) (2015)), Nevada (*see* Assembly Bill 176 of 2015 Legislative Session), North Carolina (NC General statutes – Chapter 20, article 10A, section 20-280.4(g)), Pennsylvania (*see* 66 PA Cons Stat section 2604.5(a)(1) (2016)), South Carolina (*see* Transportation Network Company Act, Chapter 23, Title 58, section 1635(A)(3)), Ohio (*see* Ohio Revised Code section 3942.04(B)), Virginia (*see* Virginia code section 46.2-2099.49(E)(4)), and Utah (*see* S.B. 294 section 13-51-105(8)(c)).

²⁸ *See* Iowa Code 2017, § 321N.3(d)(3).

²⁹ Brian Patrick Eha, *Four ways the connected car will change banking*, AMERICAN BANKER, (January 29, 2017) (“As a result, automakers are experimenting with new ownership models. Ford launched a pilot program in Austin, Texas, one year ago allowing groups of three to six people to lease a vehicle together.”), <https://www.americanbanker.com/news/four-ways-the-connected-car-will-change-banking>.

³⁰ Brian Patrick Eha, *Four ways the connected car will change banking*, AMERICAN BANKER, (January 29, 2017) (“Hyundai announced in late 2016 that it would offer drivers 24- or 36-month “subscriptions” as a way of owning the company’s new Ioniq electric car. And in January, Cadillac launched a program in New York City that gives members on-demand access to the company’s full slate of cars as an alternative to owning at all. The company already has plans to expand the program to other cities.”), <https://www.americanbanker.com/news/four-ways-the-connected-car-will-change-banking>. *See also* Greg Ulankiewicz, *The Road Ahead for Auto Lending*, THE RADDON REPORT (July 27, 2017) (“services like BOOK by Cadillac are turning car ownership into a car subscription; and driverless cars may make it all moot if and when we can simply summon a private vehicle that will get us to our destination faster and safer than ever before”), <https://www.raddon.com/raddon-report/road-ahead-auto-lending>.

³¹ Jeff Zurschmeide, *How autonomous vehicles will forever change how we buy, own, and insure cars*, DIGITAL TRENDS, (March 17, 2017) (“There will be more traditional people who want to keep owning the car as they used to, and others who will be addressing new concepts like mobility-as-a-service,” Bauer says. “Mobility-as-a-service could mean a monthly payment or individual ride-sharing. I think we’ll see subscription-based models of ownership where you change and get out of one car and get into a new one at certain times, providing flexibility.”), <https://www.digitaltrends.com/cars/autonomy-will-change-the-way-you-purchase-and-finance-cars/>.

³² There is already a gap in the regulatory regime governing rentals and leases. The federal Consumer Leasing Act, 12 CFR 213, *et seq.*, regulates personal property leases of more than four months in duration for personal, family, or household purposes, “whether or not the lessee has the option to purchase or otherwise become the owner of the property at the expiration of the lease.” 12 CFR 1013.2(f). California has its own “Vehicle Leasing Act” (Cal. Cal. Civ. Code § 1939.01 (b)), which adds extensive additional disclosure requirements and regulations. California also has the California Rental Act (Cal. Civ. Code § 1939.01, *et seq.*), which governs vehicle rentals—that is, bailments for less than 30 days. (Cal. Civ. Code § 1936(a)(2).) Neither the California Rental Act or Vehicle Leasing Act, nor

models into current legal constraints, such as walking the tightrope between commercial car rental law purchasing/leasing law (since long-term rentals often resemble short term leases, and vice-versa).³³ Otherwise, the law will have to evolve to permit these consumer-demand driven ownership models.

3. Contract Formation

(a) E-sign

The indirect versus direct lending models also are merging.³⁴ Many commentators believe that, by the time road-ready autonomous or self-driving vehicles are introduced to the market place at large, the purchasing experience will lack the brick-and-mortar of traditional dealer sales with floored vehicles.³⁵

With or without brick-and-mortar dealerships, financial services companies must put aside their reliance on paper-based financial instruments in favor of electronic contracts. Electronically-signed contracts and/or so-called “Smart Contracts” can provide better authentication than traditional paper forms and, hence, reduce identity theft and/or contract-based litigation.³⁶ Such is the intent of the Electronic Signatures in Global and National Commerce Act (“E-Sign”), which President Clinton signed in 2000. Agreements made after October 1, 2000 are subject to the requirements of E-Sign, which assures that a signature, contract, or other record

the federal Consumer Leasing Act, governs contracts for similar use for a duration of more than 30 days or less than four months. If the customer opts for “month to month” use of at least thirty days, the overlay of these statutory/regulatory schemes drops away completely.

³³ Alex Moazed, *Autonomous Cars Will End the \$75 Billion Rental Car Industry as We Know It*, INC., (Oct. 16, 2016) (“The entire car rental industry could soon be upended as autonomous vehicles change the entire calculus of car ownership over the next ten years.”), <https://www.inc.com/cox-business/how-to-choose-the-right-technology-for-your-small-business-or-startup.html>.

³⁴ Emma Sandler, *Future of Mobility, Part III: The Role Dealerships Will Play*, MOBILITY FINANCE (June 22, 2017) (“Dealers are an important part of the ecosystem, Krueger said. Dealerships are not going away, but instead expanding into different areas of mobility consumption, he added).

³⁵ Krueger & Johnston, *Financing the Future of Mobility: Auto Finance in the Evolving Transportation Ecosystem*, at 8 (Deloitte Touche 2016) (“By the time customers are purchasing their own autonomous vehicles in future state 3, the dealer interaction will likely have shifted to a highly tailored showroom experience, 23 and auto finance companies will need to offer an origination process to match, with near-instantaneous mobile loan generation and approval enabled by secure digital authentication.”), <https://www2.deloitte.com/content/dam/Deloitte/mx/Documents/manufacturing/Financing-Future-of-mobility.pdf>.

³⁶ Nina Kilbride, *Self-Driving Vehicles and Smart Contracts via the Blockchain*, CRYPTOCOIN NEWS (April 1, 2016) (“As blockchain technology integrates into the financial system, the improved evidence machine of the Smart Contract will provide better models of dispute resolution, like self-authentication of documents for litigation purposes and machine arbitration.”), <https://www.cryptocoinsnews.com/self-driving-vehicles-and-smart-contracts-blockchain/>.

relating to a transaction in or affecting interstate commerce, “may not be denied legal effect, validity, or enforceability solely because it is in electronic form.”³⁷

Congress had already attempted to ensure such certainty in electronic contracting by passing the Uniform Electronic Transactions Act (“UETA”). Forty-seven states, plus the District of Columbia and the U.S. Virgin Islands, have adopted a version of UETA. However, the states have not made this transition easy.

While contemplating that states might enact versions with exceptions to UETA’s scope³⁸, Congress explicitly included preemption language in E-Sign, prohibiting states from adopting any UETA exceptions that would interfere with the uniform federal standard.³⁹ E-Sign expressly preempts any state law affecting electronic signatures if that law “impede[s] parties’ rights to use the uniform national procedures prescribed by E-Sign or UETA.”⁴⁰ Nevertheless, some states have challenged federal e-signing supremacy.⁴¹ Interestingly, some dealers have followed the states’ lead,⁴² setting up potential legal conflicts between sellers and financiers/lenders and, arguably, impeding progress in the creation of a contractual infrastructure necessary to sustain and finance AVs.

Consumers and some industry groups have voiced several practical, and possibly unfounded concerns. They argue if motor vehicle RISCs and lease contracts are entered into electronically that will obviate the importance and effect of mandatory disclosures in such transactions, to consumers’ detriment. They argue that e-contracts make it easier for auto dealers to include “add-ons” and include terms of which consumers might not otherwise be aware (such as arbitration clauses).⁴³

³⁷ 15 U.S.C. § 7001(a) (June 30, 2000) (emphasis added).

³⁸ See UETA Section 3(b)94.

³⁹ See 15 U.S.C. § 7002(a)(1) (June 30, 2000).

⁴⁰ The Law of Electronic Signatures and Records §8.2 p. 136; see also 15 U.S.C. § 7002(a)(1) (June 30, 2000).

⁴¹ For example, California’s own E-Sign legislation (Cal. Civ. Code § 1633.1, *et seq.*) expressly exempts automobile retail installment sales contracts (Cal. Civ. Code § 2981 *et seq.*) and consumer vehicle leases (Cal. Civ. Code § 2985.7) from UETA’s license to use e-sign procedures). Cal. Civ. Code § 1633.3(c); *but see* 2017 A.B. 380.)

⁴² The California New Car Dealers’ Association has gone on record to state that e-signing is ‘illegal’ in California, and twice introduced legislation to eliminate UETA’s vehicle contract exemptions. (2016 (A.B. 1073) and 2017 (A.B. 380). In the Committee Analyses in support of these bills, the sponsoring author and CNCDA said, “Under current law, within the California Uniform Electronic Transaction Act (UETA), the use of electronic contracts and signatures on automobile sales and lease contracts is prohibited.” (*E.g.*, 2016 Senate Judiciary Committee Analysis A.B. 1743.)

⁴³ See, e.g., “*Buying a car from a dealer in California may get even more hazardous to your financial health,*” March 21, 2017 (“But if the dealers and lenders have their way, and gut California’s law against e-contracting in auto sales, dealers will be able to get away with concealing vital terms on a computer screen that you may not even be able to read. You certainly cannot take the computer or e-pad with you and shop around. It won’t be in your

Those who favor including automobile RISCs and leases within UETA’s scope say that concerns the new law would remove consumer protections are unfounded because disclosures would still be required and sellers would still be prevented from modifying contracts following execution.⁴⁴

(b) Blockchain and Smart Contracts

“Smart Contracts” (essentially, “self-executing” contracts running on decentralized block-chain technology) can replace paper, using technology at the point of execution for data checking, to drive payments and to speed up workflow.⁴⁵

Automobile finance contracts are particularly suited to Smart Contracts because they are not anonymous, and the possible variables and outcomes in a given contract can be predicted based on a relatively finite number of permutations of human behavior and legal fact patterns.⁴⁶ Automobile finance companies are already experimenting with blockchain technology and Smart Contracts in automobile sales and lease transactions, but the ecosystem is incomplete.⁴⁷

control. Instead, it will be in the dealership’s control.”), <http://carconsumers.org/blog/2017/03/21/buying-a-car-from-a-dealer-in-california-may-get-even-more-hazardous-to-your-financial-health>; Diana Hembree, *E-Contract Abuse Alert: How Car Dealers Can Fake Your Auto Loan*, FORBES, (April 14, 2017) (“E-contracting may be easy and convenient, but it has also generated consumer complaints and lawsuits across the country. Some unethical dealers have used e-contracts to charge more than the agreed-upon sales price, tack on hundreds or thousands of dollars in extra add-ons that consumers didn’t want or agree to buy, or overcharge for government fees and engage in other illegal practices – such as e-signing consumers’ names without showing buyers the contract.”), <https://www.benzinga.com/general/education/17/05/9543581/showdown-between-california-car-dealers-and-consumer-advocates-over->.

⁴⁴ <http://www.sacbee.com/opinion/op-ed/soapbox/article157609814.html#storylink=cpy>.

⁴⁵ White Clarke Group, *Auto Captives Summit Evaluates Auto Finance in New Digital Ecosystem*, (Nov. 18, 2016), <https://www.autofinancenews.net/auto-captives-summit-evaluates-auto-finance-in-the-new-digital-ecosystem-sponsored/>. See also Nina Kilbride, *Self-Driving Vehicles and Smart Contracts via the Blockchain*, CRYPTOCOIN NEWS (April 1, 2016) (“Self-driving cars have the potential to be strong vehicles for Smart Contract technology.”), <https://www.cryptocoinsnews.com/self-driving-vehicles-and-smart-contracts-blockchain/>.

⁴⁶ Nina Kilbride, *Self-Driving Vehicles and Smart Contracts via the Blockchain*, Cryptocoin News, (April 1, 2016), <https://www.cryptocoinsnews.com/self-driving-vehicles-and-smart-contracts-blockchain/>.

⁴⁷ “*Banking Is Only The Beginning: 30 Big Industries Blockchain Could Transform*,” (Aug. 25, 2017) (“The experience of leasing, buying, or selling a vehicle is a notoriously fragmented process for stakeholders on all sides of a transaction, but the blockchain could change that. In 2015, Visa partnered with transaction management startup DocuSign on a proof-of-concept project that used blockchain to streamline car leasing — transforming it into a “click, sign, and drive” process. With the Visa-DocuSign tool, prospective customers choose the car they want to lease and the transaction is entered on the blockchain’s public ledger. Then, from the driver’s seat, the customer signs a lease agreement and an insurance policy, and the blockchain is updated with that information. If the technology were to be implemented in practice, it’s not a stretch to imagine that a process of this sort might be developed for car sales and registration as well.”).

The process,⁴⁸ generally, and in an incomplete ecosystem, works like this. A prospective customer would choose the car they want to buy or lease after a test drive, evaluate their options, and complete any credit check. That car's identity would then be registered on the blockchain ledger. From the driver's seat, the customer then chooses the finance options for the car, whether to purchase or lease, mileage options, etc. The customer then "e-signs" the contract from inside the car using a Smart Contract. This transaction is updated in real time on the blockchain as a public ledger.

A Smart Contract as part of a complete ecosystem would have ledger data i.e., a "digital wallet" concerning manufacture, ownership, insurance, use, driving history, financing, etc. literally down to the nuts-and-bolts of the manufacture of the vehicle.⁴⁹ From the consumer's standpoint, this would "theoretically [enable] the car to become a smart asset because it can auto-manage services like auto insurance, lease payments, tolls, parking—even your coffee at Starbucks."⁵⁰ From the finance company's standpoint, this would lead to better collateral management. Tracking titles, liens, transfers and repossessions (topics discussed further below) are all critical functions that Smart Contracts, when fully developed, can automate.

Compliance with consumer protection laws is also, arguably, a function better scheduled and conducted via code than, for example, by an unpredictable collection agent on the telephone.⁵¹ The problems of priority between buyers-in-the-ordinary-course and unpaid secret liens held by trade-in lenders,⁵² unpaid

⁴⁸ "Smart Contracts Explained – Infographic," (Feb 9, 2017) ("On blockchains like Ethereum, Smart Contracts are a piece of code running on top of the blockchain protocols that where the rules of a transaction are embedded into the code and automatically enforced once all parties to the Smart Contract meet the pre-defined rules. Smart Contracts can radically reduce transaction costs of reaching an agreement, formalization, and enforcement of relationships between people, institutions and the assets they own, by standardizing transaction rules. The transaction rulesets (agreement) of the Smart Contract define the conditions – rights and obligations – to which parties to a Smart Contract consent. They are often predefined, and agreement is reached by simple opt-in actions. They are formalized in digital form, in machine-readable code (formalization). These rights and obligations established in the Smart Contract can now be automatically executed by a computer or a network of computers as soon as the parties have come to an agreement and met the conditions of the agreement (enforcement). This auto-enforceable code of the blockchain layer, as well as the Smart Contract layer, radically reduces transaction costs, replacing traditional middle men with machine consensus."), <https://blockchainhub.net/blog/infographics/smart-contracts-explained/>.

⁴⁹ Joe McKendrick, "Blockchain and Smart Contracts: A Pilot in the Car-Leasing Business," (September 26, 2016), <https://www.rtinsights.com/blockchain-pilot-smart-contracts-docusign-visa/>.

⁵⁰ Joe McKendrick, "Blockchain and Smart Contracts: A Pilot in the Car-Leasing Business," (September 26, 2016), <https://www.rtinsights.com/blockchain-pilot-smart-contracts-docusign-visa/>.

⁵¹ Nina Kilbride, Self-Driving Vehicles and Smart Contracts via the Blockchain, Cryptocoin News (April 1, 2016), <https://www.cryptocoinsnews.com/self-driving-vehicles-and-smart-contracts-blockchain/>.

⁵² *Gordon v. Hamm*, 63 Cal.App.4th 1324 (Cal.App. 2 Dist., 1998) ("buyers took motor home subject to original owners' lenders' perfected security interest, since lender did not authorize sale of motor home to buyers").

secret ownership interests held by wholesalers or other prior owners,⁵³ unpaid consignors,⁵⁴ or unpaid flooring lenders should—theoretically—disappear with “smart contracting” of autonomous cars.⁵⁵

The utilization of transactions between parties using Smart Contracts will help to avoid disputes and litigation since the data captured by the technology is immutable, and the transactions are, in a sense, “set in stone.”⁵⁶ Applicability of evidentiary exclusionary rules such as the parol evidence rule should not be affected simply because a contract is electronically signed versus manually signed, excepting where all buy/sell communications are also done electronically.⁵⁷

⁵³ *Quartz of Southern California, Inc. v. Mullen Bros., Inc.*, 61 Cal.Rptr.3d 54, 60, 151 Cal.App.4th 901, 909 (Cal.App. 4 Dist.,2007) (unpaid vehicle wholesaler who held Certificates of Title had priority over buyer-in-the-ordinary-course (and its assignee) who purchased vehicle from a dealer because neither dealer nor assignee had title at time of sale).

⁵⁴ *Fariba v. Dealer Services Corp.*, 100 Cal.Rptr.3d 219, 227, 178 Cal.App.4th 156, 166 (Cal.App. 4 Dist.,2009) (“One problem with consignment arrangements is they may create secret liens where a creditor of the consignee does not know the consignee does not own the consigned merchandise”).

⁵⁵ *Compare, e.g., Ford Motor Credit Company v. First National Bank of Crossett*, 2016 WL 4916829, at *5–8 (Ark.App., 2016) (RISC assignee’s security interest was superior to that of a floorplan finance company’s) with *La Gar Marketing, Inc. v. W. Finance & Lease, Inc.*, 2012 WL 4898785 (Ohio App. 9 Dist. 2012) (commercial lender’s interest superior as against a bona-fide purchaser’s).

⁵⁶ Dong Mai, “Smart Contracts Explained (for dummies...),” 99BitCoins, July 26, 2016 (“Furthermore, what will happen when disagreement appears between Bob and Alice regarding their transaction? In reality, this can be settled in court. You can feel free to question the judgment coming from a judge or a jury, but they are arguably fairer when it comes to dispute resolution, since they work on a case-by-case basis and take into account all the subtle and peculiar facts and evidences of each and every case. On the contrary, in the decentralized model, once the deal is done, it’s done. The data stored in the blockchain are immutable, and the verified transactions are irreversible.”), <https://99bitcoins.com/smart-contracts-explained-for-dummies/>. See also, Smart Contracts: The Blockchain Technology That Will Replace Lawyers,” Blockgeeks, Inc. (“The best way to describe Smart Contracts is to compare the technology to a vending machine. Ordinarily, you would go to a lawyer or a notary, pay them, and wait while you get the document. With Smart Contracts, you simply drop a bitcoin into the vending machine (*i.e.*, ledger), and your escrow, driver’s license, or whatever drops into your account. More so, Smart Contracts not only define the rules and penalties around an agreement in the same way that a traditional contract does, but also automatically enforce those obligations.”), <https://blockgeeks.com/guides/smart-contracts/>.

⁵⁷ *E.g., Kanno v. Marwit Capital Partners II, L.P.*, 2017 WL 6547078, at *1 (Cal.App. 4 Dist., 2017) (outlining two levels of integration of a written contract under California law. First, the parties may intend the writing to be a final expression of their agreement. Second, the parties may intend the writing to be a complete and exclusive statement of their agreement’s terms. If the writing is only a final expression, an additional oral agreement may be shown by parol evidence so long as its terms are not inconsistent with the writing. But if the writing is a complete and exclusive agreement, it bars parol evidence of any additional oral agreement. Here, the court holds that an oral agreement to redeem shares from the seller of a business within three years was not inconsistent with any of the three written agreements the parties entered into in documenting the sale of the business and that neither separately nor together were those three written agreements complete and exclusive, though they were final expressions of the parties’ agreements).

4. Collateral

(a) Modular Collateral, Accessions, and Bundling the Car with Software

Financing an AV that has either pre-installed or customizable software may soon begin to resemble software financing rather than vehicle financing.⁵⁸ AV prototypes generally consist of a production vehicle equipped with a myriad of high-tech hardware and software components. For example, fully autonomous AVs, such as the Google Car, utilize a combination of sensors that rely on radar, cameras, ultrasound, light detection and ranging (“lidar”), global positioning systems (“GPS”) and artificial intelligence. AVs also sport sophisticated software to interpret, analyze and act on the data provided by the sensor technology, and to support various applications such as social media, payment processing and other personal computing functions.

This begs the question: Are AVs merely the sum of their parts, or are they amalgamations of distinct components that can be separately financed, swapped in and out and upgraded? There is precedent for both. An “accession” under the Uniform Commercial Code (“UCC”) is a good physically united with other goods in a way that the identity of the original good is not lost.⁵⁹ Component parts do not lose their accession status merely because of “the cost or difficulty of removing the accession from the other goods, and regardless of whether the original goods have come to form an integral part of the other goods.”⁶⁰ A literal reading of the UCC suggests that sophisticated sensor technology components utilized in AVs, such as radar, lidar, ultrasound, and cameras should be classified as accessions so long as their addition does not fundamentally alter the identity of the car.

⁵⁸ Emma Sandler, *Future of Mobility, Part III: The Role Dealerships Will Play*, MOBILITY FINANCE, June 22, 2017 (“‘Sure, it becomes my collateral [if I’m a captive], but the collateral needs to be viewed differently because it’s so mobile,’ he said. ‘Financing software is really challenging,’ because there’s not a physical item that can be repossessed like a car.”), <http://mobilityfinance.net/future-of-mobility-part-iii-what-role-will-dealerships-play/>. See also Scott Hyman, *Hasta La Vista, Baby: The Challenges To Lenders In Financing Autonomous Vehicles*, CONSUMER FINANCE REPORT (Fall 2005) (“As AVs start to resemble rolling laptops, the U.C.C.’s accession framework provides less and less help. The Uniform Computer Information Transactions Act (“UCITA”), instead, might provide some guidance. A model uniform legal framework adopted in Virginia and Maryland, UCITA allows vendors or licensors of software to retain an interest in the software under licensing agreements. Lenders might begin to separately finance the software packages and applications utilized in AVs. Unfortunately, however, UCITA is silent on the issue of lien priority.”), <http://thebluechairstudio.com/severson-newsletter/hasta-la-vista-baby-the-challenges-to-lenders-in-financing-autonomous-vehicles/>.

⁵⁹ U.C.C. § 9-102.

⁶⁰ U.C.C. § 9-335, Comments 2, 7.

Accessions can be separately financed, and AVs' expensive component AT are no exception. For example, expensive batteries are already financed separately from other AT components and disclosed accordingly. This sort of financing model could create security priority complications for automobile lenders. The UCC might provide some help in this regard.

Under the UCC, a security interest in an accession is subordinate to a security interest in the whole if the security interest in the whole is perfected by compliance with the requirements of a certificate-of-title statute.⁶¹ Thus, if an automobile lender has perfected its security interest in a vehicle by complying with the applicable certificate-of-title statute, it also should have priority with respect to a piece of separately-financed AT that amounts to an accession. This is true even if the accession lender perfected its security interest in the accession before it was added to the vehicle and even if the accession security interest was a purchase-money security interest.⁶² As a result, future financiers of the high-tech component AT "accessions" will likely face risks if those components are affixed to titled AVs.

With Smart Contracts, this information would be in a digital ledger.⁶³ Without Smart Contracts, however, the relative importance of perfecting title and utilizing subordination agreements where possible will increase as the risk of financing component parts rises. In short, the more AVs start to resemble "digital wallets," the less the UCC's accession framework provides help to financiers.

The Uniform Computer Information Transactions Act ("UCITA") might also provide some guidance. UCITA, a model uniform legal framework adopted in Virginia and Maryland, allows vendors or licensors of software to retain an interest in the software under licensing agreements. Lenders might begin to separately finance the software packages and applications utilized in AVs. Unfortunately, UCITA is silent on the issue of lien priority.

⁶¹ U.C.C. § 9-335.

⁶² See U.C.C. §§ 9-324, 9-335.

⁶³ Nina Kilbride, *Self-Driving Vehicles and Smart Contracts via the Blockchain*, CRYPTOCOIN NEWS (April 1, 2016) ("Tracking titles, liens, transfers and repossessions are all critical functions Smart Contracts, when mature, can automate."), <https://www.cryptocoinsnews.com/self-driving-vehicles-and-smart-contracts-blockchain/>.

(b) Titling, Perfection of Security Interests, and Lien Priority

State governments, too, are prepared to transition from electronic titling, perfection, and registration systems to those managed automatically by the vehicle itself.⁶⁴ AT is key in this regard.

Like an airplane “black box,” Telematics is the recording of an automobile's activities, that observes the vehicle's performance and the driver's behaviors.⁶⁵ Such recordings—oftentimes via a device installed in the automobile—can be captured and reported in real time leveraging GPS technology.⁶⁶ Monitoring driving behaviors, vehicle performance, component part maintenance needs, and other items can improve the predictability of failure and the extent of damage, which directly impact pricing decisions. Better data enables providers to more accurately price motor vehicle service contracts in relation to the ongoing risk they present.⁶⁷

Coexistence in this ecosystem also requires coordination between the AV, the state DMV's ownership and lien database, and the state Secretary of State's UCC registration database. This is because purchase money security interests and leaseholds arise under article 9 of the UCC, while a floorplan lender's security interest would be perfected by filing a UCC1 with a state Secretary of State. The driving history and account records also could be maintained by the AV's onboard database. The retention and sharing of Telematics data, too, would depend on a number of cultural and legal issues, such as privacy, consumer consent, cyber-security, and data ownership⁶⁸—most of which can be solved when the autonomous vehicle and financing are part of the same ecosystem.⁶⁹

⁶⁴ E.g., Cal. Veh. Code § 4450.5. See also <https://www.dmv.ca.gov/portal/dmv/detail/vr/eltp> (California's Mandatory Electronic Lien and Titling (ELT) Program).

⁶⁵ Steve McLaughlin, et al., *AutoFinTech: The Emerging FinTech Ecosystem Surrounding the Auto Industry*, FT PARTNERS (December 2017) (“Telematics is an application of the connected car that is increasingly relevant to financial services. A crossover of telecommunication and informatics, telematics enables sensors to gather and transform data to be utilized for assessing risk more accurately.”), <https://www.ftpartners.com/docs/FTPartnersResearch-AutoFinTech.pdf>.

⁶⁶ Aaron E. Lunt, Benefits of Telematics to Motor Vehicle Service Contracts, IRMI, (June 2016), <https://www.irmi.com/articles/expert-commentary/telematics-motor-vehicle-service/>.

⁶⁷ Aaron E. Lunt, Benefits of Telematics to Motor Vehicle Service Contracts, IRMI, (June 2016), <https://www.irmi.com/articles/expert-commentary/telematics-motor-vehicle-service/>.

⁶⁸ Aaron E. Lunt, Benefits of Telematics to Motor Vehicle Service Contracts, IRMI, (June 2016) (Impediments to use of telematics data are: “*Privacy*. State and federal law is unsettled regarding this issue and could be the most challenging obstacle to widespread acceptance of the technology. The data being recorded often records the

B. Credit Risk Analysis

1. Consumer Reports

The ability of sellers and indirect lenders to call up Telematics, contracting history, and even consumers' social media profiles at the push of a button eases their ability to determine whether to finance a new vehicle purchase or lease, to determine how a potential consumer might preserve and protect the collateral, and to share that decision-making information with others.⁷⁰ In the new mobility ecosystem, lenders increasingly will attempt to apply algorithms to data beyond the traditional payment history in a consumer report to obtain a more complete picture of the potential borrower in order to avoid risk.⁷¹ These new algorithms and data collection methods will require lawyers, legislators, and consumer advocates⁷² to

whereabouts of an individual, his or her driving behaviors, and potential illicit activities (e.g., speeding in a school zone). State and federal law is ongoing and rapidly changing, so motor vehicle service providers must constantly observe and understand the changing legal landscape. *Consumer Consent*. To install telematics technology, consumers must regularly supply the service contract provider with consent. Consumers have been slow to embrace this technology in the personal automobile space, which has spilled over into the motor vehicle service contract industry. *Cyber-Security*. Could the data be susceptible to cyber-security events, which could reveal sensitive, personally identifiable information? Where is this information housed? How is it protected? What if a breach of such data occurs? These are a few of the questions surrounding cyber-security. *Data Ownership*. There is an ongoing discussion about who owns the data and how it can be used. For example, could information gathered from a provider be sold to manufacturers, vendors, and consumer groups? It is also unsettled as to what type of consent, if any, a provider would need from a consumer.”), <https://www.irmi.com/articles/expert-commentary/telematics-motor-vehicle-service/>.

⁶⁹ Steve McLaughlin, et al., *AutoFinTech: The Emerging FinTech Ecosystem Surrounding the Auto Industry*, FT PARTNERS (December 2017) (“Telematics and sensors within autonomous vehicles will be a valuable source of proprietary data, which can be monetized in a number of different ways, and certainly used within insurance underwriting and claims.”), <https://www.ftpartners.com/docs/FTPpartnersResearch-AutoFinTech.pdf>.

⁷⁰ Emma Sandler, *Future of Mobility, Part II: Rise of AVs Means Decline in Loan Volumes*, MOBILITY FINANCE, (June 20, 2017) (“‘The tools used for underwriting ... like artificial intelligence – there’s so much interest, research, and testing for credit decisions [right now],’ Krueger said, adding that as autonomous vehicles reach peak connectivity, there will be more innovative ways of determining credit worthiness beyond standard data from credit bureaus and banks. ‘Social media too will certainly impact the traditional lending cycle,’ he said.”), <http://mobilityfinance.net/future-of-mobility-part-ii-rise-of-avs-means-decline-in-loan-volumes/>.

⁷¹ Krueger & Johnston, *Financing the Future of Mobility: Auto Finance in the Evolving Transportation Ecosystem*, at 10 (Deloitte Touche 2016) (“The trend of proliferating sensors generating data on everything from driving patterns to health to work habits²⁵ will continue, and auto finance companies with the most complete picture of a potential borrower will be better able to control lending risk and more accurately price their products.”), <https://www2.deloitte.com/content/dam/Deloitte/mx/Documents/manufacturing/Financing-Future-of-mobility.pdf>.

⁷² Greg Meckbach, *Lots of people don’t like telematics, insurer reports*, CANADIAN UNDERWRITER, (December 14, 2017) (“‘Our customers that buy from our brokers do not wish to have a telematics device installed in their car,’ Jardine said. ‘Whether they are concerned about privacy, or monitoring of their driving behaviour, lots of people don’t like telematics and our brokers are telling us that the customers who like telematics are not the customers of our brokers.’ ”), <https://www.canadianunderwriter.ca/insurance/lots-people-dont-like-telematics-insurer-reports-1004125142/>.

reconsider what constitutes a consumer report under the Fair Credit Reporting Act (“FCRA”), who or what qualifies as a “consumer reporting agency,” and what constitutes a consumer’s “file” under the FCRA.

The base unit of FCRA regulation is a consumer “file,” that contains “all of the information on consumer recorded and retained by a consumer reporting agency regardless of how the information is stored.”⁷³ A “consumer report,” meanwhile, is any “written, oral, or other communication of any information by a consumer reporting agency bearing on a consumer’s credit worthiness, credit standing, credit capacity, character, general reputation, personal characteristics, or mode of living which is used or expected to be used or collected in whole or in part for the purpose of serving as a factor in establishing the consumer’s eligibility for (A) credit or insurance to be used primarily for personal, family, or household purposes; (B) employment purposes; or (C) any other purpose authorized under section § 1681b.”⁷⁴

There are exclusions from this definition, the most important of which is the exclusion for a data furnisher’s (i.e., creditor’s) own experience with a consumer.⁷⁵ To the extent that the new algorithms that prospective creditors employ use consumer information tracked by an on the creditor’s own customer, no new FCRA theories are implicated.

Different considerations apply, however, where an AV compiles information on its user(s) and uploads that information to interconnected financial institutions. The AV might be considered a rolling consumer reporting agency, and the data it contains might be considered a “file” until such time as it is requested by a financial institution as a “consumer report.”

The FCRA broadly defines a “consumer reporting agency” (“CRA”) as any “company that regularly assembles or evaluates consumer information for the purpose of providing consumer reports to third parties, whether it does so for compensation or on a cooperative basis.”⁷⁶ It distinguishes between a “nationwide

⁷³ 15 U.S.C. § 1681a(g).

⁷⁴ 15 U.S.C. § 1681d(1)(a)-(c).

⁷⁵ 15 U.S.C. § 1681d(2)(A)(i) (“Exclusions.—Except as provided in paragraph (3), the term “consumer report” does not include— (A) subject to section 1681s-3 of this title, any— (i) report containing information solely as to transactions or experiences between the consumer and the person making the report.”).

⁷⁶ 15 U.S.C. § 1681a(f).

CRA”⁷⁷ and a “nationwide specialty CRA.”⁷⁸ Nationwide CRAs compile and maintain files on consumers nationwide and provide data for the purpose of furnishing consumer reports bearing on a consumer’s credit worthiness, credit standing, or credit capacity. Specialty CRAs, on the other hand, include companies assembling data relating to more narrow types of accounts, such as medical records or payments, residential or tenant history, check writing history, employment history, or insurance claims.

As used in the foregoing examples, the term “nationwide” likely distinguishes the types of data maintained by an individual autonomous vehicle.⁷⁹ However, if such data is collected and shared by the financial institution(s) to whom the autonomous vehicle “reports” or “furnishes” data, the holder of that data might fall within the FCRA’s definition of a consumer reporting agency.

2. Permissible Purpose

The circumstances determining if a financial institution will be considered a consumer reporting agency may depend on the purpose for which it has requested the consumer file that the AV transmitted to it in the form of a consumer report. The critical question is whether the purpose is “permissible” under the FCRA’s definition.⁸⁰

⁷⁷ 15 U.S.C. § 1681a(p) (“Consumer Reporting Agency That Compiles and Maintains Files on Consumers on a Nationwide Basis.—The term ‘consumer reporting agency that compiles and maintains files on consumers on a nationwide basis’ means a consumer reporting agency that regularly engages in the practice of assembling or evaluating, and maintaining, for the purpose of furnishing consumer reports to third parties bearing on a consumer’s credit worthiness, credit standing, or credit capacity, each of the following regarding consumers residing nationwide: (1) Public record information. (2) Credit account information from persons who furnish that information regularly and in the ordinary course of business.”).

⁷⁸ 15 U.S.C. § 1681a(x) (“Nationwide Specialty Consumer Reporting Agency.—The term ‘nationwide specialty consumer reporting agency’ means a consumer reporting agency that compiles and maintains files on consumers on a nationwide basis relating to— (1) medical records or payments; (2) residential or tenant history; (3) check writing history; (4) employment history; or (5) insurance claims.”). The distinction between a nationwide and specialty credit reporting agency first appeared in FACTA with certain requirements and duties only applying to the nationwide credit reporting agency (previously viewed as only the “big three” TransUnion, Experian, and Equifax). Thus, the core concepts of the FCRA still apply even if the CRA is not national.

⁷⁹ Some state laws, however, do not have the “nationwide” requirement in order for an assembler of data to constitute a “consumer credit reporting agency.” *See, e.g.*, Cal. Civ. Code 1785.3(d) (“ ‘Consumer credit reporting agency’ means any person who, for monetary fees, dues, or on a cooperative nonprofit basis, regularly engages in whole or in part in the business of assembling or evaluating consumer credit information or other information on consumers for the purpose of furnishing consumer credit reports to third parties, but does not include any governmental agency whose records are maintained primarily for traffic safety, law enforcement, or licensing purposes.”).

⁸⁰ *See* 15 U.S.C. § 1681b.

In particular, when an AV is sold, leased, or used for commercial use (e.g., as a long-term rental, a ride-sharing vehicle, or even a consumer-use vehicle that's primarily used in business), financial institutions will need to maintain FCRA compliance, especially where individual loan guarantees are involved. The FCRA does afford some protection, however, for some otherwise commercial activities, such as when an individual personally guarantees a commercial transaction.

The FTC Official Staff Commentary on this part of the Act states that the credit transaction for which a prospective creditor must have a “permissible purpose” to obtain a consumer report must involve credit “primarily for personal, family, and household purposes.”⁸¹ Early court decisions held that the prospective creditor’s use of a report was not subject to the FCRA if the consumer report was used for business credit, because the report was by definition not a “consumer” report.⁸²

In July, 2000, however, the FTC opined that a potential business credit grantor could not obtain a “consumer report” on an individual in a commercial transaction even if the individual might be responsible for the business debt. The FTC applied a simple syllogism: it was not permissible to access a “consumer report” on a “consumer” in a transaction that was “commercial” in nature (*Tatelbaum I*).⁸³

Commercial lenders and their regulators responded immediately. The Office of the Comptroller of the Currency, the Board of Governors of the Federal Reserve Bank, the Office of Thrift Supervision, and the Federal Deposit Insurance Corporation all asked the FTC to reconsider its position set forth in *Tatelbaum I*, which the FTC understandably and promptly did. In June, 2001, the FTC “revised” its opinion in a political compromise that opined that a commercial creditor has a permissible purpose to pull a consumer report on an individual in connection with a commercial credit transaction when the consumer is or will be personally liable on

⁸¹ FTC Official Staff Commentary, § 604 item 1A.

⁸² See, e.g., *Ippolito v. WNS, Inc.*, 864 F.2d 440, 454 (7th Cir. 1988) (“In short, even if the reports were “consumer reports” because Equifax may have originally collected or expected information in the report to be used for “consumer purposes,” WNS cannot be held liable for requesting consumer reports. The purpose for which the Special Service Reports on Plaintiffs were requested and the purposes for which WNS received reports in the past were both non-consumer purposes.”); *Matthews v. Worthen Bank & Trust Co.*, 741 F.2d 217, 219 (8th Cir. 1984) (“We find that this particular transaction was exempt from the FCRA because the credit report was used solely for a commercial transaction.”).

⁸³ <https://www.ftc.gov/policy/advisory-opinions/advisory-opinion-tatelbaum-07-26-00>.

the debt (“*Tatelbaum II*”).⁸⁴ Courts deferred to the FTC’s new position, and no post-*Tatelbaum II* decisions have followed the *Tatelbaum I* opinion.⁸⁵

C. Risk-Based Underwriting and Fair Lending

“Dealer spread” (the difference between a vehicle seller’s purchase price and its sale price), long a boon for auto dealers⁸⁶, may lose value as new financing models appear. If consumers own their own data, underwriting for vehicular purchases and leases may drift away from an ability-to-pay model to a driving history/use model or a model that includes other data points collected by an AV unrelated to payment history.⁸⁷

Moreover, as underwriting algorithms develop, the Consumer Financial Protection Bureau’s (“CFPB”) risk-based pricing rule⁸⁸ may become less relevant, or, at least, more difficult to enforce. Risk-based pricing occurs when lenders offer different consumers different interest rates or other loan terms, based on the estimated risk that the consumers will fail to pay back their loans.⁸⁹ If a lender relied on a credit report in making a lending decision, it must send a risk-based pricing notice if the applicant received less favorable terms than other borrowers based in any part on the applicant’s credit report. This notice must include information about how to

⁸⁴ <https://www.ftc.gov/policy/advisory-opinions/advisory-opinion-tatelbaum-06-22-01>.

⁸⁵ *Baker v. American Express Travel Related Services Co., Inc.*, No. CIV-A-02-26-JBC, 2002 WL 1205065 *2-3 (W.D. Ky. May 28, 2002). See also Weinberg, FCRA Still Impacts Certain Commercial Leasing Transactions, Monitor Daily, (May/June 2007).

⁸⁶ Jeff Zurschmeide, *How autonomous vehicles will forever change how we buy, own, and insure cars*, DIGITAL TRENDS (March 17, 2017) (“If you’ve purchased a car recently, you were probably offered several attractive financing options by the dealer, with some funded by a local bank or credit union. What they didn’t explain to you is that the financial institution pays the dealer a substantial fee if you accept that loan. That doesn’t make it a bad deal for you, but it’s a major source of income on top of the price of the car for the dealer.”), <https://www.digitaltrends.com/cars/autonomy-will-change-the-way-you-purchase-and-finance-cars/>.

⁸⁷ Brian Patrick Eha, *Four ways the connected car will change banking*, AMERICAN BANKER, (January 29, 2017) (“The underwriting of car loans also appears poised to change dramatically. For now, many automakers want to own the data provided by cars’ onboard sensors, but that could soon change. It will be established that customers own the data on their driving habits, and they will be able to share — indeed, may be required to share — that data with banks and insurance companies. As a result, underwriters will get a much better idea of which customers are greater risks than others. “The dynamic use of that sensor data is going to be far more powerful” than current underwriting practices based on age and demographics, said Moven’s King. He expects companies to transition away from paper-based underwriting models to ones based on driver behavior by the end of the decade. When that happens, hidebound institutions will suffer.”), <https://www.americanbanker.com/news/four-ways-the-connected-car-will-change-banking>.

⁸⁸ <https://www.consumerfinance.gov/ask-cfpb/what-is-risk-based-pricing-en-767/>.

⁸⁹ <https://www.consumerfinance.gov/ask-cfpb/what-is-risk-based-pricing-en-767/>.

get a free annual credit report, the applicant's credit score, the score range, and the negative factors affecting the score.⁹⁰

The Equal Credit Opportunity Act (“ECOA”) was intended (in part) to stymie such practices, and the CFPB has been dedicated to enforcing it. Financiers should not be complacent, however, by thinking that computer-based underwriting can be without bias. Discriminatory implementation of neutral underwriting programs will always create ECOA and Regulation B risk. And, coding and writing of the underwriting algorithms or artificial intelligence⁹¹ might be subject to claims of bias and, in the future, provide fruitful bases for ECOA challenges.⁹²

IV. Servicing

A. Increased Regulatory Scrutiny in an Integrated Ecosystem

Origination in a closed ecosystem merges into debt servicing where all of the attendant services and products are baked into a single monthly payment.⁹³ In the

⁹⁰ <https://www.consumerfinance.gov/ask-cfpb/what-is-risk-based-pricing-en-767/>.

⁹¹ Artificial Intelligence Platform, T2, Launches Nationally to Help Dealers Sell More Cars, CISION (Nov. 24, 2017) (“T2, an artificial intelligence platform that uses car buyer pattern and prediction data to help dealers retain customers and sell more cars, today announced it has officially launched nationwide. The T2 platform leverages sales and service data to tell dealers exactly where customers will be in 90 days and who they should call, email, market, and sell to, to capture and retain increased sales opportunities.”), <http://www.prweb.com/releases/2017/11/prweb14939258.htm>.

⁹² Miller, C., *Hidden Bias: When Algorithms Discriminate*, THE NEW YORK TIMES, (July 9, 2015) “There is a widespread belief that software and algorithms that rely on data are objective. But software is not free of human influence. Algorithms are written and maintained by people, and machine learning algorithms adjust what they do based on people’s behavior. As a result, say researchers in computer science, ethics and law, algorithms can reinforce human prejudices.”), <https://www.nytimes.com/2015/07/10/upshot/when-algorithms-discriminate.html>; Byrnes, N., Why We Should Expect Algorithms to be Biased, MIT Technology Review (June 24, 2016) (“One area of potential bias comes from the fact that so many of the programmers creating these programs, especially machine-learning experts, are male.”), <https://www.technologyreview.com/s/601775/why-we-should-expect-algorithms-to-be-biased/>; Devlin, H., AI programs exhibit racial and gender biases, research reveals, The Guardian, (April 12 2017) (“An artificial intelligence tool that has revolutionised the ability of computers to interpret everyday language has been shown to exhibit striking gender and racial biases. The findings raise the spectre of existing social inequalities and prejudices being reinforced in new and unpredictable ways as an increasing number of decisions affecting our everyday lives are ceded to automatons.”), <https://www.theguardian.com/technology/2017/apr/13/ai-programs-exhibit-racist-and-sexist-biases-research-reveals>; Garcia, M., How to Keep Your AI from Turning into a Racist Monster, Wired, February 13, 2017) (“Algorithmic bias—when *Seemingly* innocuous programming takes on the prejudices either of its creators or the data it is fed—causes everything from warped Google searches to barring qualified women from medical school. It doesn’t take active prejudice to produce skewed results (more on that later) in web searches, data-driven home loan decisions, or photo-recognition software. It just takes distorted data that no one notices and corrects for.”), <https://www.wired.com/2017/02/keep-ai-turning-racist-monster/>.

⁹³ Steve McLaughlin, *et al.*, *AutoFinTech: The Emerging FinTech Ecosystem Surrounding the Auto Industry*, FT PARTNERS (December 2017) (“OEMs are increasingly partnering with payment solution providers to equip connected vehicles with in-car payment technology. Current iterations of these truly mobile wallets are largely limited to paying for parking and gas, but have numerous potential use cases. By offering additional services that

emerging mobility ecosystem, automobile finance companies will need to think beyond the narrow monthly-payment mindset in servicing consumer debt. “Making a car payment via your automobile is an obvious application.⁹⁴ More complexity will arise, however, when the AV can speak to third-party tech, such as the gas pump or the Starbucks drive-through lane. Or, whether it speaks with government agencies, such the DMV or Secretary of State, who presumably would maintain data regarding titling. Certainly, the new ecosystem will also include regulators, such as state finance lender licensing agencies, the CFPB or other banking regulators.⁹⁵ Automobile finance companies must consider the increased regulatory scrutiny that will come from those directions before undertaking ordinary debt servicing.

B. Fair Debt Servicing

An argument made by data-crunch techies that is sure to make consumer protection law practitioners wince⁹⁶ is that debt service compliance issues are better handled by artificial intelligence or blockchain technologies than debt collectors on the telephone.⁹⁷ Surely, the elimination of legal involvement has been greatly

tap into the Internet of Things and these new forms of connected technologies, OEMs are rebranding themselves from automakers to technology enabled mobility companies.”), <https://www.ftpartners.com/docs/FTPartnersResearch-AutoFinTech.pdf>; Jeff Zurschmeide, *How autonomous vehicles will forever change how we buy, own, and insure cars*, DIGITAL TRENDS, (March 17, 2017) (“We have to completely reimagine the car-buying and ownership process,” Bauer insists. “For example, we could put together in one single monthly payment all the components of maintenance, insurance, parking, registration, fuel, and accessories. Today you have to schedule everything yourself, you have to pay separate bills and providers. It’s a completely antiquated process.”), <https://www.digitaltrends.com/cars/autonomy-will-change-the-way-you-purchase-and-finance-cars/>.

⁹⁴ Brian Patrick Eha, *Four ways the connected car will change banking*, AMERICAN BANKER, (January 29, 2017) (“This is the big one, the one everybody thinks of. If the car becomes a smartphone, then it’s a no-brainer to bring mobile — truly mobile-payments to everybody’s morning commute.”), <https://www.americanbanker.com/news/four-ways-the-connected-car-will-change-banking>.

⁹⁵ See, e.g., Ben Berliner, *House bill looks to secure IoT ecosystem*, FCW (Oct. 10, 2017) (“Rep. Robin Kelly (D-Ill.), the ranking member of the IT Subcommittee of the House Oversight and Government Reform Committee, is looking to help improve the security and oversight of the emerging internet-of-things ecosystem.”), https://fcw.com/articles/2017/10/10/iot-kelly-bill-berliner.aspx?admgarea=TC_Agencies.

⁹⁶ Roberto Hernandez, et al., *New Route Ahead: The Changing Dynamics of Auto Finance Risk and Compliance Highlights 2017*, pp 18 (PwC 2017) (“These technologies present unique opportunities as well as new risks. While they can make businesses more efficient, they can also create additional complexity and make it more difficult for risk functions to understand the logic behind why the technology functioned the way it did.”), <https://www.pwc.com/us/en/consumer-finance/publications/auto-finance-risk-compliance-highlights-2017.html>.

⁹⁷ Nina Kilbride, *Self-Driving Vehicles and Smart Contracts via the Blockchain*, CRYPTOCOINSNEWS (April 1, 2016) (“Compliance, especially with consumer protection law, is another function potentially better handled in advance by code than, for example, by a collection agent on the telephone.”), <https://www.cryptocoinsnews.com/self-driving-vehicles-and-smart-contracts-blockchain/>; Kevin Mole & Marie-Claude Nadeau, *Beyond the Buzz: Harnessing Machine Learning in Payments*, MCKINSEY & COMPANY, (September 2016) (“Opportunities to expand the use of

exaggerated,⁹⁸ but the ecosystem in which AVs will operate will undoubtedly have automated compliance functions or “Reg-Tech.”⁹⁹

The Fair Debt Collection Practices Act contains a panoply of debt-servicing restrictions when communicating with debtors, such as restrictions against causing a telephone to ring or engaging anyone in telephone conversation repeatedly or continuously to annoy the debtor,¹⁰⁰ prohibiting calls at inconvenient times or places¹⁰¹ and prohibitions against continued calls after a cease-and-desist¹⁰² or notification of attorney representation.¹⁰³ Financial institutions automating debt collection for consumers owning or leasing automated vehicles will have to establish a collection compliance program that complies with these debt servicing laws.

Blockchain technology that is part of a complete ecosystem for AVs could be employed in the service of compliant debt collection programs.¹⁰⁴ Just as a Smart

machine learning in payments range from using Web-sourced data to more accurately predict borrower delinquency to using virtual assistants to improve customer service.”), <https://www.mckinsey.com/industries/financial-services/our-insights/beyond-the-buzz-harnessing-machine-learning-in-payments?cid=eml-web>.

⁹⁸ “*Smart Contracts: The Blockchain Technology That Will Replace Lawyers*,” BLOCKGEEKS, Inc., <https://blockgeeks.com/guides/smart-contracts/>.

⁹⁹ Roberto Hernandez, *et al.*, *New Route Ahead: The Changing Dynamics of Auto Finance Risk and Compliance Highlights 2017*, pp 18 (PwC 2017) (“These technologies present unique opportunities as well as new risks. While they can make businesses more efficient, they can also create additional complexity and make it more difficult for risk functions to understand the logic behind why the technology functioned the way it did.”), <https://www.pwc.com/us/en/consumer-finance/publications/auto-finance-risk-compliance-highlights-2017.html>.

¹⁰⁰ 15 U.S.C. § 1692d(5); Cal. Civ. Code §§1788.11(d), 1788.17. *See generally*, Hyman, *Fair Debt Collection Practices Acts*, DEBT COLLECTION IN CALIFORNIA, § 2.33 (Cal. CEB 2017) (collecting cases).

¹⁰¹ 15 U.S.C. §1692c(a)(1). *See generally*, Hyman, *Fair Debt Collection Practices Acts*, DEBT COLLECTION IN CALIFORNIA, § 2.27 (Cal. CEB 2017) (collecting cases).

¹⁰² 15 U.S.C. §1692c(c); 15 U.S.C. §1692c(c). *See generally*, Hyman, *Fair Debt Collection Practices Acts*, DEBT COLLECTION IN CALIFORNIA, § 2.31 (Cal. CEB 2017) (collecting cases).

¹⁰³ 15 U.S.C. §§ 1692b(6), 1692c(a)(2). *See generally*, Hyman, *Fair Debt Collection Practices Acts*, DEBT COLLECTION IN CALIFORNIA, § 2.28 (Cal. CEB 2017) (collecting cases).

¹⁰⁴ Stephanie Eidelman, “*These New Innovations Will Change Debt Collection, One Way or the Other*” (March 14, 2017) INSIDEARM.COM (“Imagine a scenario where a consumer’s identity could be automatically confirmed when she answers the phone (how about a voice match?). And then what if we could re-imagine the FDCPA-required Mini Miranda disclosure so that it didn’t sound like you were getting arrested? Then imagine a process where account information would be delivered through blockchain technology. A consumer could access all of her financial records, and those records could be trusted because 1) control and maintenance responsibility by a single centralized source would be eliminated, and 2) hacking would be far less likely because a perpetrator would have to alter each and every “block” in the “chain” of information.”), <http://www.insidearm.com/news/00042696-these-new-innovations-will-change-debt-co/>. Stephanie Eidelman, “*Blockchain-Based Smart Contracts Approved in Arizona; Could this Technology Make it to Debt Collection?*” (April 24, 2017) INSIDEARM.COM (“The debt collection community – including creditors, collection agencies and consumers – could benefit greatly from innovation that provides transparency and trust. Unfortunately there are many hurdles, including regulatory

Contract would maintain the debtor’s contractual consent to be called on an auto-dialer for purposes of compliance with the Telephone Consumer Protection Act,¹⁰⁵ the vehicle’s blockchain history would unmistakably show a partial¹⁰⁶ or full revocation, a change in the debtor’s circumstances,¹⁰⁷ or that the Smart Contract prohibited revocation altogether, absent a written amendment.¹⁰⁸ So, too, would the blockchain digital ledger show cease-and-desists or other modifications to consumer contacts and control such contracts in a legally compliant way, and control the way¹⁰⁹ or the times and contexts¹¹⁰ in which the autonomous vehicle speaks to the debtor.

limitations and perceived risk by financial institutions. Blockchain may or may not prove to be the solution, but many industries and organizations – including major banks -- are in active exploration of how it might be used in their domain. In my opinion, the conditions and requirements of the debt collection ecosystem make it a perfect candidate for this type of innovation.”), <https://www.insidearm.com/news/00042810-blockchain-based-smart-contracts-approved/>.

¹⁰⁵ Calls or texts made or initiated with the express consent of the called party are not actionable under the TCPA. 47 U.S.C. §227(b)(1)(A)–(B). *See generally*, Troutman & Hyman, *Telephone Consumer Protection Act*, DEBT COLLECTION IN CALIFORNIA, § 2B.24 (Cal. CEB 2017).

¹⁰⁶ Schweitzer v. Comenity Bank, 866 F.3d 1273, 1274 (11th Cir. 2017) (a TCPA plaintiff can “partially” revoke consent to be called by an autodialer).

¹⁰⁷ Kevin Mole & Marie-Claude Nadeau, *Beyond the Buzz: Harnessing Machine Learning in Payments*, MCKINSEY & COMPANY, (September 2016) (“Collections: Collection practices and debt restructuring work best when closely aligned with borrowers’ changing circumstances and propensity to pay. Machine learning can help companies build robust dynamic models that are better able to segment delinquent borrowers, and even identify self-cure customers (that is, customers that proactively take action to improve their standing). This enables them to better tailor their collection strategies and improve their on-time payment rates. TrueAccord’s HeartBeat, for instance, is a machine learning tool that helps lenders customize personal interactions in real time, based on its ability to detect why a customer’s payments are late. Companies using machine learning have been able to reduce their bad debt provision by 35 to 40 percent.”), <https://www.mckinsey.com/industries/financial-services/our-insights/beyond-the-buzz-harnessing-machine-learning-in-payments?cid=eml-web>.

¹⁰⁸ Reyes v. Lincoln Automotive Financial Services, Inc., 2017 WL 2675363, at *6 (C.A.2 (N.Y.), 2017) (“We are sensitive to the argument that businesses may undermine the effectiveness of the TCPA by inserting “consent” clauses of the type signed by Reyes into standard sales contracts, thereby making revocation impossible in many instances.”).

¹⁰⁹ Brian Patrick Eha, Four ways the connected car will change banking, AMERICANBANKER, (January 29, 2017) (“Ford in early January announced that it would become the first automaker to integrate Amazon’s Alexa into its cars. While banking with Alexa is not yet possible, the virtual assistant will be able to provide the weather forecast and search for nearby gas stations on command. Consumers who have an Amazon Echo smart speaker at home will even be able to turn their cars’ engines on or off or check their battery levels from indoors.”), <https://www.americanbanker.com/news/four-ways-the-connected-car-will-change-banking>.

¹¹⁰ Brian Patrick Eha, *Four ways the connected car will change banking*, AMERICAN BANKER, (January 29, 2017) (“Context matters too, Pearce said. Is the car parked? If so, a touchscreen interface would be viable. Are other people in the car? The way a car owner wants the app to function when commuting or running errands by herself might be very different from how she wants it to function when driving a careful of kids to a weekend soccer game.”), <http://mobilityfinance.net/future-of-mobility-part-i-who-will-own-vehicle-finance-data/>.

V. Realization on Collateral

A. Data

Data ownership is currency in the new autonomous mobility ecosystem.¹¹¹ Transfer of data to the creditor during repossession or realization of collateral is also an integral part of the ecosystem's value chain.¹¹²

B. Repossession on Demand

How data can legally be used to realize on collateral is less clear. For example, a starter interrupt device may track a vehicle purchaser's or lessee's scheduled payments under a finance or lease agreement and prevents the vehicle from starting if a scheduled payment is not received. The use of starter interrupt devices (effectively, repossession by remote control) had previously been the stuff of subprime "buy-here-pay-here" dealers.¹¹³ Now, it is part of the new wave of FinTech debt solutions.

Legislators and regulators have taken notice. For example, the UCITA limits software vendors' use of electronic self-help (*i.e.*, a kill switch written into the software code) by requiring separate assent to the use of such a technique, notice to the consumer prior to its use and a requirement that a creditor will not engage in such electronic self-help if it would result in substantial harm to the public.¹¹⁴

Should regulators worry that remote repossession technology will result in clogged freeways, with AVs returning home to the lender like drones? Doubtful. The UCC's self-help rules on breach of the peace are relatively well established. And

¹¹¹ Emma Sandler, *Future of Mobility, Part I: Who Will Own Vehicle Finance Data?*, MOBILITY FINANCE, (June 19, 2017) ("The golden ring is data," Krueger said. "It's not by chance that so many people want to be the digital presence of a car. It's worth a lot of money."), <http://mobilityfinance.net/future-of-mobility-part-i-who-will-own-vehicle-finance-data/>.

¹¹² Brian Patrick Eha, *Four ways the connected car will change banking*, AMERICAN BANKER, (January 29, 2017) ("While much of the technology to make such payments a reality exists, 'it's not just about the technology,' said Richard Meszaros, the connected-commerce lead at Accenture. "It's about the ecosystem that needs to be part of this user experience. The car may have the technology, but if the car can't talk to the fuel pump it doesn't matter. There is a network effect [that has to happen] here. ... What's more, the arrival of fully autonomous vehicles may actually prop up private car ownership — at least to some extent — because it would mean that 'owning an automobile has finally become a good investment opportunity rather than a bad one,' Annamalai said. Banks could provide loans to buy self-driving cars, which could then be used for ride-sharing services — earning money for their owners when the owners weren't using them."), <https://www.americanbanker.com/news/four-ways-the-connected-car-will-change-banking>.

¹¹³ *E.g.*, Cal. Civ. Code § 2983.37(a)(2).

¹¹⁴ UCITA § 816.

this problem is actually not new—subprime lenders using starter interrupt devices or GPS-tracking to secure payments arguably paved the way for analyzing repossession by remote control. And, at least at present, GPS data and Telematics are not usable for simple collateral recovery, but rather, only for stolen vehicles or pursuant to government subpoena.¹¹⁵

C. Commercial Reasonableness

With GPS and Telematics data, and as part of a Smart Contract ecosystem, lenders who repossess vehicles or take vehicles back at the end of lease term can know exactly where a vehicle has been and/or what the vehicle has been put through.¹¹⁶ With such data overload, the residual or resale values of used vehicles will become more commoditized.¹¹⁷ Moreover, the modular nature of AVs may keep them on the road longer, with only electrical or battery parts being replaced.¹¹⁸

VI. Conclusion

AVs and the ecosystem to which they belong are a part are evolving at break-neck speed. Finance companies will pay an integral part in the autonomous vehicle ecosystem, and attorneys working with and representing finance companies must have the background in the science of the ecosystem as well as the legal and regulatory environment to ensure that legally compliant systems are created, monitored, and connected.

¹¹⁵ Tim Cushing, “Law Enforcement Has Been Using OnStar, SiriusXM, To Eavesdrop, Track Car Locations For More Than 15 Years,” (Jan 17th 2017), <https://www.techdirt.com/articles/20170116/09333936490/law-enforcement-has-been-using-onstar-siriusxm-to-eavesdrop-track-car-locations-more-than-15-years.shtml>.

¹¹⁶ Krueger & Johnston, *Financing the Future of Mobility: Auto Finance in the Evolving Transportation Ecosystem*, at 10 (Deloitte Touche 2016) (“With increased connectivity, the lender’s understanding of any particular vehicle will become increasingly comprehensive; it is feasible that in the near future an auto finance company could know exactly where, when, and how a car has been driven since it first rolled off the assembly line.”), <https://www2.deloitte.com/content/dam/Deloitte/mx/Documents/manufacturing/Financing-Future-of-mobility.pdf>.

¹¹⁷ Krueger & Johnston, *Financing the Future of Mobility: Auto Finance in the Evolving Transportation Ecosystem*, at 10 (Deloitte Touche 2016) (“But just as smarter and more-connected vehicles will affect underwriting and servicing, the increased volume and variety of data will also erode auto finance companies’ ability to differentiate based on superior asset knowledge, particularly in future state 3. As the state of the vehicle becomes more transparent and knowable in real time, residual management becomes easier—but also commoditized.”), <https://www2.deloitte.com/content/dam/Deloitte/mx/Documents/manufacturing/Financing-Future-of-mobility.pdf>.

¹¹⁸ Krueger & Johnston, *Financing the Future of Mobility: Auto Finance in the Evolving Transportation Ecosystem*, at 10 (Deloitte Touche 2016) (“Or, given these vehicles’ modular nature, they may be kept in service through frequent replacement of electric motors on wheels and regenerative braking; battery packs can be pulled out and reused, potentially creating a larger market in reusing components.”), <https://www2.deloitte.com/content/dam/Deloitte/mx/Documents/manufacturing/Financing-Future-of-mobility.pdf>.

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