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The Impact of “Right to Repair” Legislation on Innovation and Intellectual Property in the Automotive Industry

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Abstract

With the advancements of new technologies and the necessity to comply with governmental regulations the automotive industry is producing increasingly complicated advanced vehicle systems. Along with the complexity of these vehicles comes the complexity of repairing them. The issue regarding who should have access to the information necessary to make these repairs has been debated since the early 1990s and continues to be of concern.

The “Right to Repair” legislation suggests that independent repair shops, with no manufacturer affiliation, are prohibited from accessing this information and need more assistance to repair cars than what is already in place. My thesis will examine the issues associated with “Right to Repair” and show how various forms of its legislation would infringe on intellectual property rights and decrease innovation in the automotive industry.

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Introduction

The automobile industry is one of extreme importance to the United States. Americans depend on automobiles to get them to and from work, home, and everyday events, and their presence largely impacts daily life. In a national sense, the industry is invaluable. It commonly accounts for 5% of GDP and although it struggled through the recession of 2009 in 2011 it employed more than 650,000 American workers. Both complete vehicles and auto parts are manufactured by the automakers, with the parts being used for either repair or aftermarket modifications. (Office of Transportation and Machinery). Dealerships or independent repair shops can work on a car when a repair is needed, and recently some independent shops have claimed that they do not have the information necessary to work on newer vehicles with more complex systems. Manufacturers provided the tools and training necessary for repairs, but some groups remained persistent that they did not possess enough information, and began proposing legislation called the "Motor Vehicle Owner's Right to Repair." Though suggested as a way to help independent repairmen gain easy access to the tools necessary to fulfill repairs, "Right to Repair" compromises intellectual property rights of automotive manufacturers and threatens to decrease innovation in the industry.

With changing environmental regulations, the auto industry was evolving and frequently creating new opportunities in the last 20 years. This legislation came after vehicles were required to become much more technological as a result of the Clean Air Act of 1990. The Clean Air Act required all vehicles produced to have an on-board

computer system that monitored regular system operations, such as fuel emissions. As technology advanced these computers controlled more than just emissions. They controlled newly designed electronic components; whose importance is unparalleled, as electronic advancement within vehicles is the major factor contributing to automotive innovation. It is estimated that 90% of the advancements seen in the automotive industry since the late 1990s are due to electronic advancements, not mechanical or design related.

Since the early 2000s, common features in cars such as anti-lock braking systems, tire pressure monitoring systems, and blind spot recognition have become the norm. These on-board computer systems typically have around 50 control units, with some more advanced vehicles nearing 80. These control units are what power every component of all the electronic systems mentioned. There are currently over ten electronic safety systems available to be manufactured in cars and there is no doubt that the market is eager for them. Sales of these systems have been steadily on the rise around the world, with over 80 % of vehicle owners stating that they find these features beneficial to their driving experience (Trage 3). While these features raise the sticker price of a car significantly and move it toward a more luxury position, it is important to note that these are not used solely as a symbol of status. These systems were designed and produced by manufacturers after many years of research and development to make driving safer and more convenient and they have done just that. Fatal accidents around the country have steadily been declining since 1975, decreasing 26.8 % from 1992 to 2009. A portion of this decrease can be attributed to safer roads and signs, as well as education regarding alcohol impaired driving, but vehicle safety is

also of extreme importance if an accident occurs or is likely to occur (*Traffic Safety Facts 2009*). With an aging population, it is noted that older drivers need more assistance while on the road and they are some of the customers looking for safety features such as speed recognition and lane deviation warnings (Trage). The existence of these features is what pushes the industry forward.

In an effort to comply with federal regulations regarding safety and environmental cleanliness and to provide customers with the most up to date and safest features available, technology has become very advanced and complex within automobiles. It is essential that innovations such as the ones previously described continue to be invented and fine tuned in the coming years here in the United States to ensure customer satisfaction and the presence of jobs in American automotive manufacturing. This requires significant investments from the manufacturers and a reasonable assurance that their technologies remain protected, something that is threatened with “Right to Repair” legislations. The specific threats this legislation poses will be described later in this thesis.

Vehicle Repair

As the complexity of vehicles and their on-board computer systems increases, so does the complexity and skill necessary to repair them. The next part of this thesis will examine the history of vehicle complexity and the request for further information by repairmen, while providing information on what choices consumers have when a repair is needed. Then, it will discuss previous legislative efforts on the issue of “Right to Repair” that occurred at both the federal and state level.

Repair of cars is essential to the survival of the automotive business. The Automotive Parts industry is a large factor in this issue because parts typically arrive from a third party supplier. They are either produced for newly produced cars, known as Original Equipment (OE), or used as a means to repair or modify cars after they have been driven. Some of the major players in this industry are businesses such as AutoZone, American Automobile Association (AAA), and Midas.

With the average vehicle life of lightweight vehicles staying steady at 9.2 years, a car owners is likely to have to fix something on their car at some point during their ownership (Office of Transportation and Machinery). When a vehicle owner notes that something needs to be done to their car they have a few options. They can attempt to fix the car themselves if they possess the skills necessary or they can take it in to a shop. The shops available for them to use fall under one of two distinctions. They may visit a dealer owned repair shop, commonly located at an automotive dealership or in close proximity, or they may visit an independent repair shop.

Dealerships gain their profits from three main divisions. New vehicle sales account for 52% of their sales, with used vehicle sales accounting fro 33%, and finally service and parts accounting for 14%. While service departments contribute substantially to dealerships sales, not all dealerships have a service center built with their facilities. In the past ten years the percentage of dealerships operating with service shops has decreased more around 10% (Exhibit 1). This is in part due to the availability of independent shops and customers visiting them instead (*Nada Data 2011*). Independently owned and operated shops are typically much smaller in size and possess fewer diagnostic repair tools. This is due to the fact that manufacturer specific

dealerships are required to comply with training and standards set forth by the manufacturer. However, not all independents are significantly at less of an advantage to the dealerships. Some invest a great deal of money in their tools and shops, and others, such as AutoZone, have an established brand that helps their customer recognition.

When performing service on a vehicle, other than those easily and frequently performed such as an oil change, an employee must use a scanning tool to receive information on the vehicle and how to repair it. These tools are necessary because vehicles are very complex with many different computer codes operating different aspects of the vehicle. Access to the software that runs these scanning tools, different for every manufacturer, is available for purchase online for the Independent repair shops. When the legislative efforts are described further in this thesis, it will be explained how this information became available for purchase.

The decision of where to take a car is often impacted by whether the car is under warranty from the dealership, thus making repairs much cheaper at a dealership, or it can simply be the choice of the customer. Customers know that if they go to an aftermarket repair shop they will receive cheaper service than going to a dealer specific shop, and it is their choice to choose the cheaper service. With approximately 75% of after warranty repairs being completed at independent facilities, it is noted that customers don't base their decision solely on where they purchased the vehicle; they desire competitive prices (Massachusetts Auto Coalition, n.d.). This is not a large detriment to automotive manufacturers because their main concern is making sure the customer is satisfied with their purchase from the point of sale to years down the road

when it is time to purchase a new vehicle. Both aftermarket shops and dealer repair shops provide a lot of the satisfaction to car owners, and manufacturers appreciate this, as it will likely keep them satisfied with their vehicle of choice and may consider it highly when looking for their next purchase.

An American Marketing Association experiment researched deeper what factors are considered when choosing where to receive vehicle service. This study found that prior experience is most important to consumers when deciding where to have their car repaired, leading them to return to places of enjoyable experience and never returning to those where they felt dissatisfied. Of the participants, 65% thought substantially about prior experiences before deciding where to send their car for routine repairs. Routine repairs are defined as common maintenance jobs that occur from use, and not from an external event. These repairs account for 80% of repairs and generally cost around \$100. When searching for places to receive service, car owners did not usually search very thoroughly, with 71% asking family members for opinions and evaluations. This shows that car owners place a lot of emphasis on their overall experience when getting a repair done (Biehal).

Vehicle repair is a necessity for many Americans choosing to keep their cars for multiple years, and the choices they have for this repair are very different. The major differences between dealerships and independent shops have just been described, and it should be noted now that the Independently operated service centers have frequently felt they are at a disadvantage to dealership service zones. Sometimes they are unable to provide service to a customer because they don't own the correct software and can't work on a specific vehicle (Finnegan). This angers customers that don't want to be

forced to get their car repaired at a dealership, and pay higher prices, if their Independent shop of choice is unable to fix their car. As a result the Independent shops have banded together to take legal actions to request an even playing field among all repair centers.

Legislative Efforts

The legislative efforts to request an equal playing field between dealership and Independent service centers have escalated with the increasing electronic complexity of new cars. Since the Clean Air Act in 1990, vehicles have become much more sophisticated so they can meet the standards for emissions and fuel economy set forth by the government. As mentioned earlier, there are over 80 control units in the computers of each vehicle, and in order to read these codes manufacturer specific software is required. This became an issue in the late 1990s because some Independent shops didn't have all of the available software and felt that there was an information gap between them and franchised dealers (Massachusetts Auto Coalition, n.d.). They began speaking out and requesting assistance in obtaining the information required, stating that manufacturers prevented them from retrieving the codes necessary.

As a response to this upheaval, The National Automotive Service task Force (NASTF) was organized in 2000. It was formed to facilitate communication between manufacturers and repairmen and to determine what steps were necessary to ensure fair competition (Massachusetts Auto Coalition, n.d.). It is their goal to ensure that

automotive repairmen have the tools, information, and training necessary to professionally diagnose and fix the nation's constantly evolving mix of vehicles.

Before a solution was reached by NASTF, Independent shops continued to state their struggles with successfully repairing cars because they did not possess the necessary codes, and customers began to be concerned as well. As mentioned earlier 75% of repairs are performed at aftermarket facilities, and if this large percentage of customers were limited to only visiting dealer repair shops they would be very dissatisfied with the manufacturers. As a result the first "Right to Repair" proposal came in 2001. This was a federal bill suggesting that it intended to end a type of unfair monopoly that car manufacturers possessed by withholding their information from others. It stated that automakers would need to release access of system codes and designs to independent shops. The bill was unsuccessful, largely because it did not specifically protect manufacturers trade secrets, but its existence prompted a meeting between both sides of the issue to try and find a compromise.

Upon meeting and working with the NASTF a conclusion was reached and manufacturers agreed to make available the software requested online for purchase. This software is what reads the codes repairmen find when they scan a vehicle with the scanning tool described earlier. The NASTF developed a website in 2001 to provide both sides with links to the information desired. However, following 2001 supporters of "Right to Repair" were unsatisfied with the compromise and a form of the original federal bill was again introduced unsuccessfully in congress every year following 2001 (Jensen). Supporters also began attempting to pass the bill at the state level and

attempted this in over 10 other states, including New York, New Jersey, Massachusetts, and Oregon (*The Truth about Auto Repair in Massachusetts.*)

Massachusetts represents the current stage of this issue as a version of the initial federal bill from 2001 passed in 2012 after three long years of battle. This law began as H.102/S.104 in congress and in July “Right to Repair” was approved to be placed on the November ballot. During the same time, representatives from both sides were working to create a new compromise law, H.4362, that would solve the remaining issues of information availability, without the specific language that was in the ballot initiative.

H.102/S.104 contains language that could be interpreted in a way that might threaten confidential business information, by allowing any individual interested to sue for proprietary information. With this law if an individual feels the manufacturer has failed to provide them with the correct and necessary information they must first file a complaint through the NASTF formal complaint request process within 30 days of their failed information retrieval. After this complaint, if the manufacturer does not adequately fix the issue, the interested party may now file a complaint with the superior court or federal district court (Kinsman). These complaints can be filed by any interested person, not just repair shops, and it is of concern that these lawsuits will be filed by parts manufacturers looking for codes and they will result in manufacturers having to release their proprietary information to anyone.

This fact also brings attention to the law from other industries such as medical and biotech as they feel it may pose an indirect threat to their operations if a law such as “Right to Repair” is put in place. It is of concern that high technology protection will

be threatened because this law will place a precedent over who has rights to information and how they may sue to obtain it, proclaiming that anyone interested should be able to have access to the information (Anderson).

By the time the compromise law was enacted it was too late to remove the issue from the November ballot. Both sides stated that they were satisfied with the compromise H.4362 reached and were urging voters to skip the question of “Right to Repair” altogether on election day. Unsuspected, a few weeks before voting day supporters started lobbying heavily for a ‘yes’ vote and “Right to Repair” passed in Massachusetts in November with a large percentage. This creates controversy in the state because now there are two laws, the compromise H.4362, and what Question 1 passed on Election Day. Debates are still being had and it is uncertain what will come of this issue in Massachusetts, and whether other states will soon attempt to pass a similar legislation.

Supporters of H.102/S.104 argue that with Independent auto shops unable to compete with dealer shops they could go out of business and put skilled repairmen out of work. On the other hand, the automotive industry is one of the largest in the United States and its success is imperative to the American economy. The GM and Chrysler bailouts of 2009 asserted this fact as it was stated by President Obama, “Their survival and the success of our overall economy depend on it” (Hoffman). Automotive manufacturers are in a position where they must continue innovation and success to survive, and they are not in a position to be sustainable with a new loss of significant revenue opportunities

This issue and debate is important to everyone, not just employees in the automotive industry immediately affected by this bill or customers in the state of Massachusetts. Its implications have the ability to affect everyone in the United States and potentially the worldwide market. With over 89% of all households in the United States owning at least one car, and ultimately requiring service on their car at some point, the issues raised in this debate are of importance to the majority of citizens. Preventing H.102/S.104 and its skewed language that will allow anyone to sue for proprietary information from becoming law would help to keep drivers safe, jobs in America, and will help keep the automotive industry innovative and able to provide customers with the best products available.

This bill currently threatens a rise in the number of counterfeit parts produced and used, affecting everyone who owns and operates a car and their safety. With these counterfeit parts coming from other countries comes the loss of jobs in America. This has the potential to affect everyone in the workforce. The final impact this issue would have on the United States is that it would hinder the automotive industry from advancing and leveraging their intellectual property to its fullest potential.

The remainder of this paper will be structured in a way that builds on the information already presented. Intellectual Property basics will be discussed and it will be determined which aspects of this type of law relate to the issue of Right to Repair and why. Next the paper will present the threat of counterfeit parts this issue raises and how this is of concern because it infringes on the rights automakers have to their intellectual property, and consequently, demotivates them to innovate further. The paper will conclude by raising questions regarding the future of this industry and others,

as this law will likely influence other bills to be proposed, and offers final suggestions as to what should be done instead of furthering the debate over this issue that has gone on unnecessarily for many years.

Intellectual Property Law

It is important to understand the basics of Intellectual property to understand how “Right to Repair” may infringe on the rights of manufacturers. Intellectual Property law was designed for the protection of company’s research and creation of unique products and services. It gives the owner exclusive rights to the product, idea, or design, etc. and is intended as a way to spur growth and provide incentives for innovating. If a creator is guaranteed to fully benefit from their idea, the concept is that they will work harder at making better products than if they would not have exclusive rights. There are four main subdivisions of intellectual property law, copyrights, patents, trademarks, and trade secrets.

Copyright law is in place to provide legal protection of goods such as music, literary works, or computer software and designs. The crimes this is in place to prevent are ones such as pirating music or movies and then selling them for a profit. This area of Intellectual Property law is sometimes hard to find as it may involve criminals using very intricate codes on the computer, but the U.S. Department of Justice is very adamant about stopping copyright infringements and punishing those who violate the law in a serious way.

A patent is used to give a creator rights to their product for a specified period of time in exchange for making their process public. These can either be utility, plant, or

design patents. Utility patents refer to a new process or a manufactured item, or improvements to an already established process. Design patents are those that protect specific features, or shapes related to a company. Plant patents refer to genetically designed plants. These and utility patents run for a period of 20 years, while design patents are 14 years in length (Fitzpatrick and DiLullo). The U.S. Patent and Trademark office reviews was established to make certain that violations are not made.

Patent law is most relevant to “Right to Repair” as it is of concern to the automakers that their patented design codes will become easily accessible to anyone. They fear that with this law their patents will be compromised and competitors and counterfeiters can produce the same parts without having done all of the research that the manufacturers have done.

Trademark law is similar to patent law and they are the two factors most responsible for handling the global counterfeit business. The United States has a history of counterfeit goods arriving from China and there is large conflict involving the two countries over this issue. Having a trademark will protect a word, symbol, or any other visual characteristic unique to one specific product. Ford Motor Company has trademarked the signature blue oval that surrounds the word Ford on all of its goods. The World Intellectual Property Organization can produce trademarks for multiple countries if need be under the protection of the U.S. trademark law. Trademark law is also in place to protect companies from falsely advertising goods as one of a higher or more recognized quality or brand. Trademark law also relates to “Right to Repair” because counterfeit goods sometimes mask their inferior goods with the logo of the more reputable company that they copied their goods from.

The final component of Intellectual Property law that is increasingly important to high technology companies is that of Trade Secrets. Trade Secrets denotes an area of IP law that protects the secrecy of information that is imperative to some technique, process, device, or program. If available this information could be of monetary value to another group, so its secrecy is important. This area of law came into importance in 1985 as the Uniform Trade Secrets Act was established, intended to protect organizations with valuable information. If a patent is filed and upon duration of the patent a new discovery is made that is of value to the process it can then also be filed as a trade secret and does not have to be disclosed, even if it relates to another patent. Violation of this law can result in very high monetary fines and prison sentences (Fitzpatrick and DiLullo). Protection of trade secrets requires very thorough processes that keep few people in the know about what the product is by marking files as confidential, requiring confidentiality agreements, and restricting access to the information to only those essential to its success. Trade Secrets are sometimes a confusing area because they are kept so secret, and in order to ensure their protection, new laws being considered must contain very specific language making certain that they will not be compromised. While "Right to Repair" supporters claim that the law will not require divulging of trade secrets, they are not specifically protected if an individual brings forward a lawsuit as mentioned earlier requested that they receive more information.

Counterfeit History

The presence of counterfeit auto parts affects the United States by decreasing revenues of OEMs and thus decreasing the availability of domestic auto manufacturing jobs and by threatening vehicle safety. The next part of this thesis will explain how counterfeiting negatively affects the U.S. and then how “Right to Repair” may cause an increase in this illegal activity. First, it will be explained what counterfeit auto parts are and how large of an impact the counterfeit industry is currently having on the American economy.

Parts in the automotive industry are classified into two types, OEM or aftermarket. OEM parts are usually produced by large firms, with extremely high competition. Here in the United States the main OEM producers are Chrysler, GM, and Ford. Aftermarket parts are used in the repair of vehicles and their market is highly countercyclical. It is important to note that not all aftermarket parts are counterfeit, but this is where counterfeit parts are introduced into the market.

Counterfeit parts are produced by unauthorized manufacturers to look very similar to legitimate OE parts. They may bear identical design, packaging, branding, and trademarks, but the major difference is how they are produced. They are typically sold at 50-80% of the OE price, but only perform at 20-30% capability (MEMA Brand Protection Council). Some of the most commonly counterfeited auto parts are oil filters, brakes, bumpers and hoods, and steering arms; each one of these parts being essential to the safety of a vehicle. It is very dangerous to have a counterfeit part installed on a car or truck, as they do not have to pass government safety regulations or meet any standards during the process of their production. In a 2009 survey of 420 fatal crashes, 25% stated vehicle part defect as the cause (*Traffic Safety Facts 2009*). This shows

that having sturdy auto parts can help save lives. Receiving OE parts from an authorized dealership service center or online is the only way to be certain that a vehicle has not received counterfeit parts (Automotive Aftermarket Suppliers Association).

Along with affecting the safety of car owners, counterfeit parts affect the domestic auto industry negatively. In the past 30 years counterfeit trade has become much more of an issue in the United States, estimating that its global cost is \$600 billion a year with \$12 billion of that belonging to the automotive industry. In 2007 only \$847,000 of counterfeit auto parts were seized at the U.S. border, a very small percentage of the amount of revenue lost. It is estimated that because of counterfeit auto parts, there are between 200,000 and 250,000 jobs lost, with each one paying about \$60,000 a year (MEMA Brand Protection Council). These are some large numbers and combined with the fact that they also cost the government in the form of lost tax revenue and enforcement, and negatively affect auto manufacturers' brand reputations, it is apparent that their presence hurts the American economy.

These parts can be introduced to the United States by a variety of ways; they may be bought on the Internet, through a mail order, a Broker, or a Master Distributor. The Internet has been the recent area of expansion for this market. Since 2010, searching for automotive aftermarket parts online has increased by nearly 23 %, with these searches accounting for .15% of all Internet traffic in February 2012. (Exhibit 2). China is considered to be the biggest threat with this issue. Since joining the WTO China has steadily been advancing their economy, and their growth rate is above 7 %, predicting that by 2030 China will top the world in terms of economic strength. This booming economy, however, is not perfect due to the lack of structure in the industry

and political support. The Chinese auto industry has a focus higher on quantity than quality, and this is not without notice from other countries. Their parts market is suspect by many other economies (Donnelly 204). Anti counterfeiting groups and trade agreements have been made to combat this fact in previous years. Legislation introduced in the 109th congress made illegal the production and trafficking of fake labels and packaging for counterfeit goods (Cooney CRS-21) This is a positive sign that the United States has been taking action against counterfeiting, but the battle seems to be far from over.

The United States Aftermarket Parts Market has been decreasing since 2003 while the United States has had a steadily increasing trade deficit with China of automotive parts since 2000, with the exception of the year 2009, shown in Exhibit 3. This fact is alarming considering the percentage of automotive parts that are counterfeit in Asia is almost 17%. The United States is importing these parts from countries that are rife with counterfeit parts, and with the introduction of this bill, it is a concern that the counterfeit parts produced will increase.

New Counterfeit Threats with “Right to Repair”

The legislation presented, suggesting that all that is wanted is repair tools and codes in a simple online format for the benefit of both independent shops and customers could actually immerse the market with counterfeit aftermarket parts. In a condensed version, this legislation is requiring that all vehicles be produced with the same universal computer system that holds the codes and controls for almost all parts of the car. The name of this system is J2534. Next, all independent repairmen, or any

interested party, may purchase the information and codes they feel necessary to complete their repair job. This legislation poses a threat of counterfeit parts in two ways. Hackers may be able to access the computer system, or individuals may be able to sue for the information they desire.

J2534 is a software interface that was created fifteen years ago, and with “Right to Repair” it is mandated to be the only type of interface used in every vehicle. This poses a problem because it is an outdated computer system and the law does not allow for alterations to this system at any time. Automakers are constantly altering their onboard systems to keep them safe from hacker’s attempts, but with this mandate they are not allowed to use any of the onboard systems they’ve been working on, they are forced to use J2534. Because this technology is an older version and also due to the fact that it will not be constantly changing, hackers may become acquainted with the technology and be able to access it easier. Once a hacker has accessed important information they may be able to sell the codes to companies who want to make counterfeit parts.

The second aspect of this law that could potentially flood the market with counterfeit parts is the ability for anyone to sue for the proprietary information. If a person has looked online for the codes they need, and don’t feel they were presented enough information to fix their problem, they may sue the manufacturers for the information. This ability to sue and potentially be granted access to manufacturers proprietary information is a serious threat to the OEMs. This law doesn’t only allow the independent repairmen the ability to sue, but any interested person. The organizations

that would most likely sue for information are the aftermarket producers, so they can obtain the information and then produce counterfeit parts overseas.

Pep Boys, an aftermarket parts producer, was recently involved in an occurrence of importing counterfeit goods from China and selling them here in the United States. These counterfeit parts affected over 250,000 sales. This shows the significance of importing counterfeit goods and how widespread the dangers can potentially be (Environmental Protection Agency).

Counterfeit parts are a serious issue and this law could increase their presence in the U.S. This threat does not only affect OEMs either, it is the independent shops that will suffer. Although independent shops are positioned as those who benefit most from “Right to Repair”, even their businesses are threatened by the increase in counterfeit part existence. Depending on where they order their parts from they may receive counterfeit parts and then install them on a customer’s vehicle. While this law is described as a way for all repair shops to be placed on equal grounds by allowing equal access to repair information, it actually has severe implications in the production of parts industry as I have shown here. “Right to Repair” is a law that threatens the safety of drivers and the survival of many industries in the U.S. by it’s threat of allowing more counterfeit parts than are already present to be produced and sold here.

Manufacturer and Dealer Innovation

The next effect of this law that will be discussed is the effect it has on innovation. This will be looked at in terms of manufacturers and the franchised dealerships and also independent shops and their innovation. Car manufacturers spend years creating

automobiles that distinguish themselves from others and showcase their unique features. This research and innovation must be protected and not hindered. The counterfeit parts that may be produced as a result of this law threaten manufacturers by making their patents seem less valuable.

The idea of protecting parts designs in the automotive industry has been prevalent since the early 1960s, decades before the introduction of “Right to Repair”. At this time, there was a case between Aro Manufacturing Company and Convertible Top Replacement Company. The issue was whether parts could be worked on without infringing the patent in place. It was concluding that as long as the repair did not reconstruct the part, and only repaired it, there was no infringement on the patent. According to the United States Constitution it is the purpose of patents and copyrights “to promote the progress of science and useful arts” by securing “for limited time to authors and inventors the exclusive right (Wanstrath). This is essentially why manufacturers invest excessive time and money into new products. They want to advance the industry and be rewarded for their work.

Original Equipment Manufacturers (OEMs) spend large amounts on research and development to create new and innovative technologies in automobiles, but imitation companies can copy the product with sophisticated scanners and then remake it and sell it without any of the same investments incurred by OEMs. Not all imitation parts are like the counterfeit parts previously discussed, with significantly lower performance ratings, but easy ability to copy parts is cause enough for anger at the OEM level. This is due to the fact that they have spent a great sum of money and time creating the new product and feel it should be thoroughly protected by their patents.

Those who support legislation like “Right to Repair” argue that car manufacturers hold an unfair monopoly over the parts repair market. This is supported by the fact that only 3,700 out of 212,000 unique collision parts, used in repair, are produced by non-OEMs. This would appear that OEMs do hold the vast majority of the market but, in fact, there is nothing stopping the imitators from producing the other parts, they are simply focusing their efforts on the 3,700 most profitable parts (Wanstrath). These parts are most profitable due to their frequency of being replaced and relative ease of production. Because it is their choice to only produce those parts, the concept of a monopoly existing is incorrect.

The conflict just described points out the ongoing difficulty of patent protection in the automotive industry and why OEMs hold the value of their patents so highly and think it’s important that they stay clearly protected. With “Right to Repair” every piece of information about a vehicle is mandated to be connected to the universal interface, J2534, and if either a hacker accesses the information or an individual is granted access through litigation the threat of more inferior aftermarket parts is increased.

Manufacturers value their inventions highly and deserve to be rewarded for them by the protection a patent ensures. When this assurance is threatened and manufacturers feel it will become easier for imitation devices to emerge, they will not have as great of an incentive to create new and innovative products, because the benefit entitled to them will not be as great.

The restrictive platform, J2534, also poses a threat to manufacturer’s innovation because of how outdated it is and it’s mandatory implementation date. To begin with, the fifteen year old computer interface is one that will not work with future

advancements made in the ever-changing auto industry. This would severely limit manufacturers and their research and development. Technology advancements are not a static force and thus it is not logical that they should be limited by a static agreement, such as the one suggested with J2534. Usage of this would only create a stale environment with no incentive or ability to innovate on a vehicle's components.

This onboard interface is required to be the unit controlling all aspects of the vehicle and under "Right to Repair" it is required to be in all vehicles produced in and after 2015. This is a problem because cars typically take 5 to 7 years to design, as manufacturers take their time creating the code that controls the vehicles technical aspects and making sure everything is properly protected under the law. The idea of all manufacturers redesigning the codes that control all of their cars flawlessly in three years is unrealistic and puts more credibility to the threat that this law will threaten intellectual property. The fact that this law has only passed in one state means that manufacturers will have to completely alter the production of their vehicles for only one state. This will require significant money and time, something that is constantly being squeezed by manufacturers continually having to update their vehicles to comply with declining emissions and increasing fuel economy standards. It is a possibility that vehicles will not be ready for sale by 2015, or that some manufacturers will choose to only produce some of their vehicles for sale in Massachusetts following that year.

The manufacturers and their franchised dealers are also threatened by the fact that their natural advantage will be taken away from them. Dealerships are required to invest money into training, tools, and certifications for their service employees that independent shops are not required to do, but do have the option to do. They also have

to follow regulations that are placed on them from the regulations that manufacturers have to follow (Dewsnap). These investments and compliance with requirements not asked of independent shops are their specific way of innovating and distinguishing themselves. These services are a viable element of the different intellectual property components discussed earlier; IP is not only relevant to physical products. They set themselves apart by the measures they take to perform their business. These methods are unique to that specific operation and were designed and put in place for the purpose of benefiting that business in a way others are falling short of. "Right to Repair" will hinder these shops from setting themselves apart and advancing in the industry.

Independent Shop Innovation

The initiative of a shop investing more than others in tools and training is not exclusive to dealer specific repair shops. Many independent shops spend their money on access to repair codes and tools that other shops choose to not purchase. An independent shop owner in Massachusetts has opposed this law for that very reason, stating the following:

While tools and information are accessible, it is important to note, however, that not every independent shop in Massachusetts today is qualified or fully prepared to service every make and model of vehicle, and understandably so. Each shop owner must make a business decision as to the investment he or she makes in the required tools and technician training to repair each brand.

Making that business decision is their own right, and not something they are forced to do. With the new law shops will be required to invest in one specific computer system

that is compatible with the newly designed diagnostic systems, even if they have already invested significant money in more advanced systems.

Currently, when purchasing codes for repairing cars, shop owners have the option of daily passes, monthly, or yearly depending on how long they need that specific manufacturer's diagnostic tools. With "Right to Repair" codes will only be available for purchase in yearly packages (Rooney). This is a significant addition to repair shops bills and will result in higher prices for customers if the independent repair shop can still operate successfully.

Future

Through the research presented throughout this paper it has been shown that this bill would create a larger threat of counterfeit components in the auto industry in the United States and it would decrease automaker motivation to innovate, but it also has the potential to negatively impact the industry and business operations of both the manufacturers and independent repair shops, who this bill claims to benefit. With the redesign of vehicles that this bill requires, automakers would be tasked with completing the process in a short amount of time, and this will threaten the success of other requirements put on them. There are constantly evolving environmental regulations that manufacturers must comply with, and combining these two responsibilities has the potential to negatively impact the quality of the products produced. It will undoubtedly increase prices that will be charged to customers, but the threat is there that it will drastically lessen the innovative ideas currently in design. Independent shops will have an uncertain future as a result of this bill as well. It is broadcasted that this bill will

benefit the small independent shops and help them compete in the future, but realistically the benefits of this bill are placed with the large parts producers, and the ability of them to create cheaper, counterfeit parts. These large parts producers, such as Pep Boys which was discussed earlier, will have greater access to information and can outsource their production to obtain cheaper, fake parts. The question is whether it would be the government's place to assist in the advancement of already large auto parts producers and give them an advantage over the neighborhood shops that do everything on their own to compete. In a statement before the Joint Committee on Consumer Protection and Professional Licensure a Massachusetts independent repair shop owner quoted the following, professing that she knows her shop will suffer if this bill passes. This statement supports my analysis that the future of independent shops is, in fact, more uncertain and threatened than secure with this bill.

Who stands to gain if this measure is passed? Not independent technicians. In fact, if successful, this measure would make auto repair more transactional, taking professionals out of the process. The ballot measure benefits "big box" auto parts distributors and retailers and quick lube chain outlets, not skilled independent repair shops like mine. Instead of expanding competition, it seeks to limit it by marginalizing independent repair professionals.

Rather than the proposed alteration to the auto industry that will require every manufacturer to place their diagnostic codes in one universal system, an environment focusing on open innovation would be more beneficial. Exhibit 4 shows the importance of different trends in the auto industry today and projected in ten years. Technology will continue to show an increasing percentage of importance in this industry, and technology advancements are driven by innovation, so it is imperative that the process

of innovation be protected. By locking all manufacturers into one system, J2534, they will all be on the same playing fields, but this is not where innovation takes place. It has been discovered that through diversity and varying environments the most profitable ideas are developed. By keeping groups controlled in one area, uniformity occurs and it is much more unlikely that advances will occur (Nemeth and Staw). "Right to Repair" will interfere with the industry by not stimulating manufacturers enough to create new innovations. As mentioned earlier this law also threatens industries other than the automotive industry. This law will place a precedent over who has rights to information and how they may obtain it, proclaiming that anyone interested can sue for proprietary information. People in the medical industry have vehemently opposed this law because of this and the implication it could have in the medical technology industry (Anderson). On February 5, 2013 the potential implications of this law were seen as the Service Industry Association created a digital right to repair group to garner support for laws like "Right to Repair" but in any type of electronic, such as TV's, appliances, cell phones, and e-readers. If each of these devices were to have the potential of many more counterfeit parts and manufacturer innovation to stall, it is unknown what will happen to the market (*Service Industry Association*). The time available to find an acceptable solution to this issue is very minimal as legislators in other states have seen how this bill can successfully pass in the state level now and will began pushing harder for it in their states. In late 2012 a similar bill was proposed in Maine and it is likely that other states will follow suit as well (Bell). A solution to this disagreement between shops and automakers is essential to securing customer satisfaction as well as securing jobs in both industries, but the solution is not that detailed in the "Right to Repair" legislation.

Better communication between opposing sides and education about what is and what isn't available is the best way to ensure competition and ongoing innovation

Conclusion

The protection of intellectual property is an essential factor in inspiring innovation in the automotive industry and ensures that there is healthy competition between manufacturers to create the best products for the customer base. While there are many players in the automotive industry, from manufacturers, to repair shops, to parts producers, they each have their position and purpose within the supply chain. It is a mistake to think that the "Right to Repair" legislation proposed would help this process in a significant way. The "Right to Repair" law undermines intellectual property and opens the threat of more counterfeit parts produced and hinders manufacturers, dealers, and repair shop's innovative advantages, and creates a dangerous precedent for future laws to impose government regulation in a negative way on an industry.

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Exhibit 1:

Dealerships operating on-site body shops

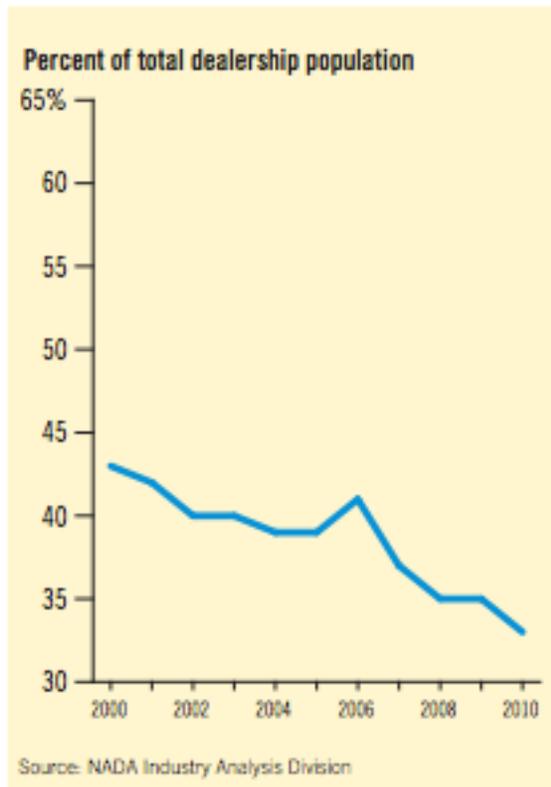


Exhibit 2:

Market Share of Visits to Online Auto Aftermarket Retailers

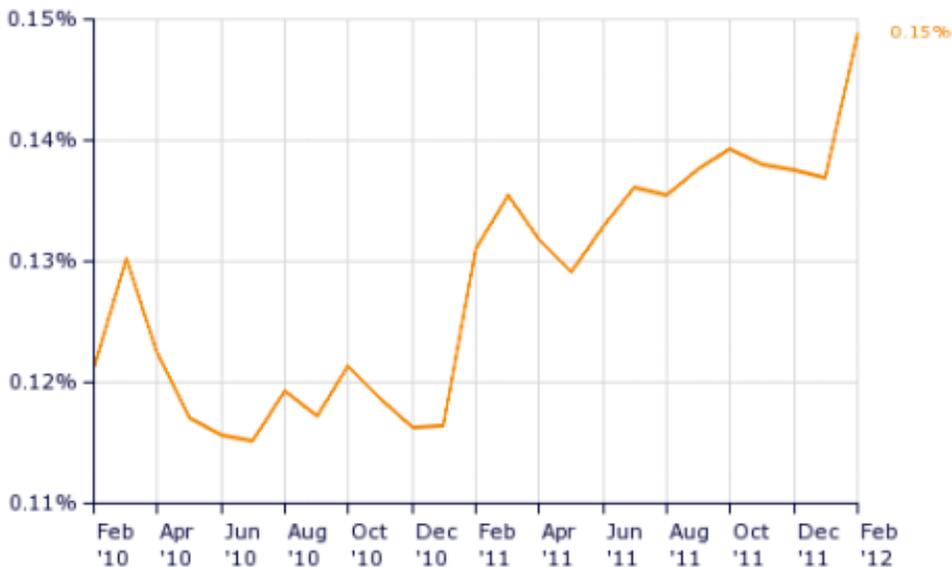
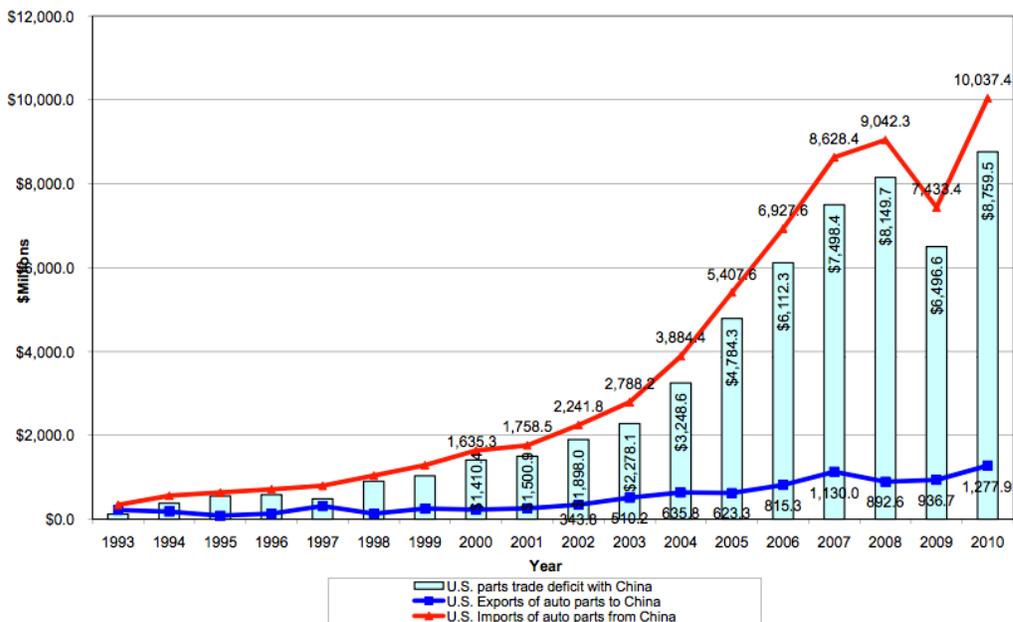


Exhibit 3:

Chart 12
U.S. - China Auto Parts Trade, 1993-2010
 In 2010, the parts trade deficit with China increased 34.8 percent over 2009 levels



Source: U.S. Department of Commerce, Bureau of the Census.

Exhibit 4:

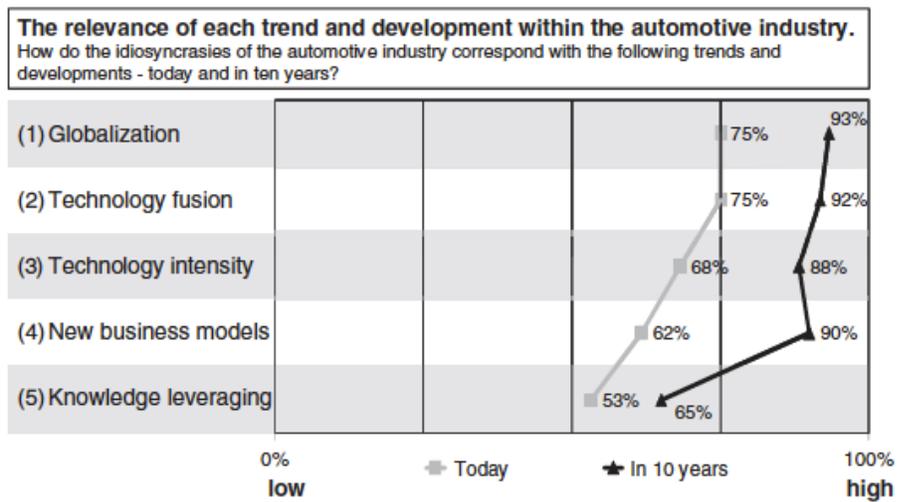


Exhibit 1. The relevance of Open Innovation in the automotive industry.